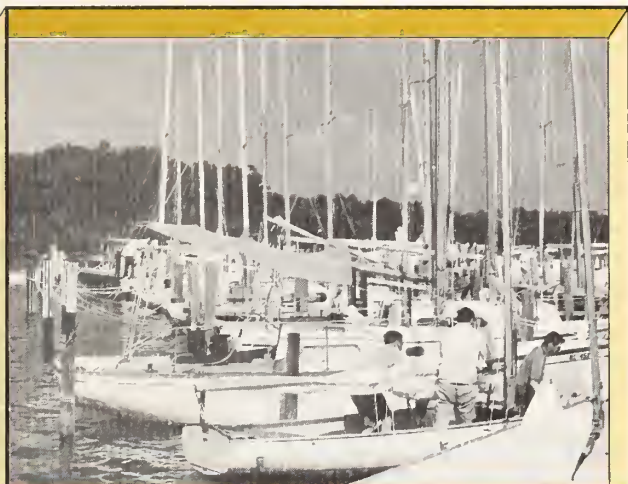


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LAND POTENTIAL STUDY

BEAUFORT COUNTY, NORTH CAROLINA

ABSTRACT

TITLE Land Potential Study, Beaufort County, North Carolina

AUTHOR State of North Carolina, Department of Conservation and Development, Division of Community Planning, Coastal Area Office, P. O. Box 1129, Washington, N. C. 27889

SUBJECT The Development Prospects of the Land and Land Culture of Beaufort County, N. C.

DATE April 1969

LOCAL PLANNING AGENCY Beaufort County, North Carolina, Planning Board

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HUD PROJECT NUMBER NCP-54

SERIES NUMBER Two of four

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ABSTRACT This study delves into the basic physical resources available for development in Beaufort County. Climate, geology, ground water, surface water, minerals, and soils are all considered from the perspective of their potential influence upon future development.

This study contains information concerning the land, air, rail, and water transportation network within the County, as well as inventorying such community facilities as fire and police protection, water and sewerage equipment, natural gas availability, and medical facilities.

This study sketches the historic settlement of Beaufort County, identifies the basic existing land use pattern in the County, and discusses some of both the bright and the dim prospects for future development in Beaufort County.



LAND POTENTIAL STUDY

BEAUFORT COUNTY, NORTH CAROLINA

The preparation of this report was financed in part through an urban planning grant from the Department of Housing and Urban Development, under the provision of Section 701 of the Housing Act of 1954, as amended.

PREPARED FOR THE COUNTY OF BEAUFORT, NORTH CAROLINA

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April 1969

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INTRODUCTION



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INTRODUCTION

The County Commissioners created a planning board in 1963 and appointed its first six members. One board member was appointed from each of the townships of the county. The statutory duties of the board are to make careful studies of the resources, possibilities, and needs of the county, particularly with respect to the conditions which may be injurious to the public welfare or otherwise injurious, and to make plans for the development of the county. Based on these studies and plans, the planning board makes recommendations to the Board of Commissioners.

In April, 1967, Beaufort County entered into a contract for the beginning of a comprehensive, county-wide planning program. Funds for the program are provided by the local and Federal governments. The planning board has received technical assistance from the staff of the Division of Community Planning of the North Carolina Department of Conservation and Development.

There are four elements to the contract: a Land Potential Study, an Economic Potential Study, a Land Development Plan, and Subdivision Regulations. This publication, titled the Land Potential Study, has been conducted to determine those physical, topographic, geophysical, and cultural features that create a potential for and will influence future development. Among these features are existing land use, drainage basins, water use, soil suitability for various uses, and utility coverage.

The Economic Potential Study is another background study. This report was published in December, 1967. Among the factors studied are the population and characteristics, labor force, extent and duration of unemployment and economic activities. The factors contributing to economic growth or

stagnation have been identified. A set of specific goals has been developed with the broad goal of improving the economy of the county.

The Land Development Plan is a plan based upon the findings of two background studies. The amount of land required to satisfy the needs of all major land uses during the planning period of twenty years will be determined. The most desirable areas for homes, commerce, industry, and public uses will be suggested.

Subdivision Regulations will be drafted to serve as a means by which to implement the Land Development Plan. These regulations will spell out the procedure for approval of all proposed subdivision plats and the information that they shall contain before being submitted to the Register of Deeds for recording. Other contents will be design standards, improvements required, penalties for noncompliance, and methods for acquiring variances from the provisions.

Hopefully, this will be only the start of a continuous planning program. Other studies envisioned are a zoning ordinance, a recreation study, a governmental facilities plan, a public improvements program, and a capital improvements budget.

HISTORY

The area that present day Beaufort County is a part that was called Pamticough by the Indians. North Carolina was divided and given to eight loyal lords by King Charles II of England in 1663. Lord Clarendon named his property the county of Bath after John Granville, Earl of Bath, another lord proprietor in 1696. This was a very large county; it extended from the Albemarle Sound to the Cape Fear River and reached all the way to the Pacific Ocean. The county was divided in 1702 and the present county of Beaufort was established. It was called Pamticough until 1712 when the name was changed to Beaufort after Henry Somerset, Duke of Beaufort.

The early settlers began to appear about 1690 on the most desirable landing sites along the Pamlico River. Some of these persons were the most adventurous of the Albemarle Area settlers. Other settlers were French Protestants who made their way through the Oregon and Ocracoke Inlets.

In 1706, a town of about twelve houses and a public library was established on Bath Creek near the Pamlico River called Bath. This same year, it became the first town in North Carolina to be incorporated and later, in 1744, it became the state's first capital. The public library was the first in America. The library became a center of records of all types, but it did not last many years. The valuable manuscripts were slowly embezzled until there was none left.

Bath had a troublesome and dramatic early history. Governors Daniels and Cary had near rebellions when they tried to place restrictions on the Quakers, Presbyterians, and other religious "independents."

After Cary was replaced as governor by Edward Hyde in 1709, Cary was defiant. The two raised armies and fought each other for the governorship. Before either was successful, the Indians saw their opportunity to attack the divided settlers. In 1711, a major Indian War erupted which brought death and destruction to the settlements. Bath, however, survived but at a heavy loss. The war ended in 1714 after both sides were rendered too weak to fight.

Two decades later, Bath became the home of the famous pirate Blackbeard - Edward Teach - and his thirteenth wife. Blackbeard was safe here because of his friendships with high government officials including the governor. He continued his piracy along the outer banks, using Ocracoke as his headquarters. He was killed off Ocracoke by an English captain and the brief, but eventful, Blackbeard era came to an end.

Before the revolution, Beaufort County was a growing and thriving mercantile center, led by the wealthy Blount family. Bath and Washington, established at the fork of the Tar River in 1726, were the central points of this trade. The old post road from Boston to Charleston ran through Bath crossing the Pamlico by ferry until 1783 when it was re-routed through Washington. Washington doubled in population quickly but Bath received a death blow to its hopes of ever becoming more than a small town.

As reported by the first federal census taken in 1790, Beaufort County had 5,462 residents. Of this number, 1,632 were slaves. The county continued to show almost uninterrupted growth until 1950. The only period of decline was during the Civil War and reconstruction. Washington was captured by the Federal troops in 1862. These troops held the town until the spring of 1864. As the town was deserted by the troops, it was sacked, pillaged, and almost completely burned to the ground. During the reconstruction era, Beaufort

County was known only as Military District 2 to its hated carpetbagger government. The period of greatest growth was between 1880 and 1900 as a result of the arrival of the railroad in 1878.

The famous "Show Boat" which has been dramatized by a motion picture, a Broadway play, and a novel by Edna Ferber, was built at Washington in 1913. It was called the James Adams Floating Theatre and later the Original Floating Theatre. It began its career on the Pamlico, but success carried it all over the Atlantic Coast.

OTHER TOWNS

AURORA, Incorporated 1880

This town started as a small congregation of farmers led by Rev. W. H. Cunningham in 1857. It is located on the headwaters of South Creek which is a navigable connection to the Pamlico River. It was at one time considered the potato growing capital of the State.

The town was practically deserted during the Civil War when it became populated with a troublesome band of fugitive slaves.

The town has remained relatively small through the years, serving as a trading area for nearby farmers.

BELHAVEN, Incorporated 1889

Fish, oysters, and crab pour into the juncture of the Pungo River, Pungo Creek, and the Pamlico River. Near this point, the town of Belhaven, originally called Jack's Neck, was started. Some of the seafood is processed in Belhaven and some is shipped away for preparation. It is the home of one of the largest crabmeat packing plants in the world.

CHOCOWINITY, Incorporated 1959

Near the south bank of the Pamlico opposite Washington and centered around the juncture of U.S. Highways 17 and 264, is the old community of Chocowinity. It was founded in the early 18th century and was strictly agriculturally oriented. Its first name was Godley's Crossroads. No one knows when the name was changed to Chocowinity, the name of a creek nearby. Chocowinity is a Tuscororan name of disputed meaning.

PANTEGO, Incorporated 1881

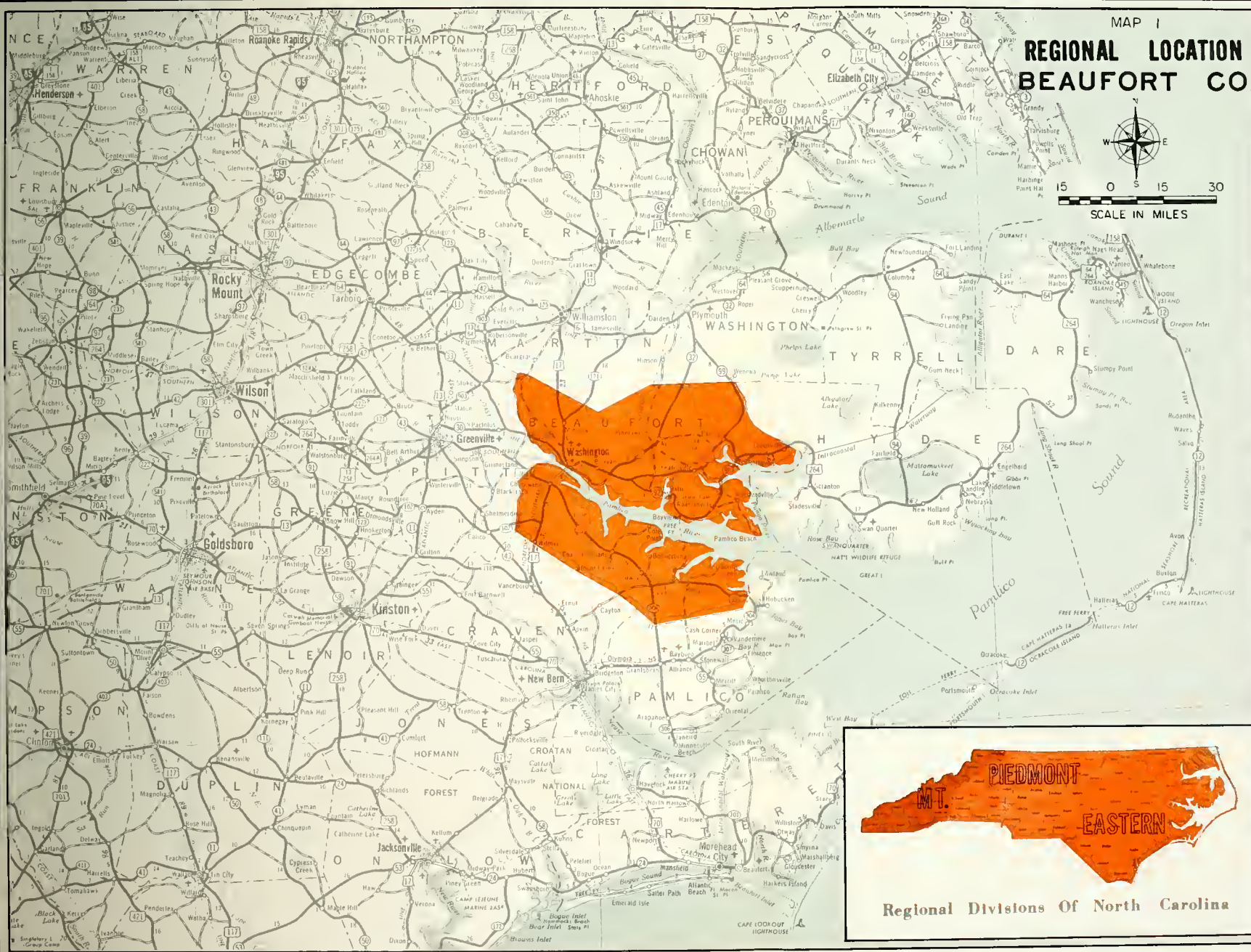
In 1775, Rothius and Phinius Latham purchased three hundred acres of land north of Pantego Creek and laid the foundation for the Town of Pantego.

In 1840, Albemarle Lumber Company started operations in the Dismal Swamp and made Pantego its shipping point. This activity increased the population. Stores and dwellings were built for the convenience of the lumber company personnel.

The town was incorporated in 1881. The population at that time was 300. It is noteworthy that the population has hardly changed since.

WASHINGTON PARK, Incorporated 1923

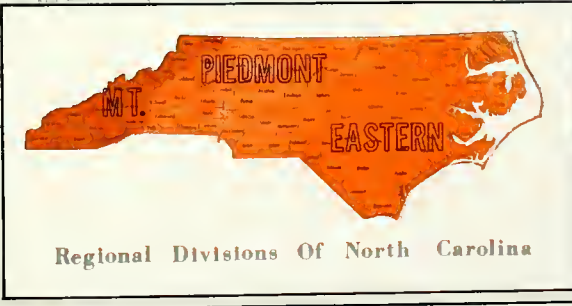
Until 1923, Washington Park was a suburb of Washington. The people in the area sought annexation in order to get street improvements. They were turned down by the City. So, in 1923 the suburb incorporated into the town of Washington Park and floated bonds in order to finance street improvement. Washington Park has remained a nice residential neighborhood.



MAP I
**REGIONAL LOCATION
BEAUFORT CO**



15 0 15 30
SCALE IN MILES



Regional Divisions Of North Carolina

PLANNING AREA

The Planning Board is authorized to make plans for all lands within the boundaries of the county. However, the county does not have the authority to implement these plans within any incorporated town in the county or in its extraterritorial jurisdiction. This duty belongs to the legislative bodies of the towns. It is the county planning board's responsibility to assure that through coordination and cooperation, its efforts are in line generally with those of the local planning boards.

REGIONAL LOCATION

Beaufort County is in the eastern part of North Carolina located on the lower lying marine terraces of the Coastal Plains. It is approximately 100 miles east of Raleigh, 115 miles south of Norfolk, and 30 miles inland from the Outer Banks.

Beaufort County is bordered by six counties -- to the north by Martin and Washington Counties; to the east by Hyde County; to the west by Pitt County; and to the south by Pamlico and Craven Counties.

The county is very irregular in shape, the boundaries being formed in part by streams. Its length is approximately 40 miles from east to west, and its greatest width is approximately 33 miles. The land area is 831 square miles or 531,840 acres. The county is divided into two parts by the Pamlico River, a wide, tide-water stream with irregular shore lines.

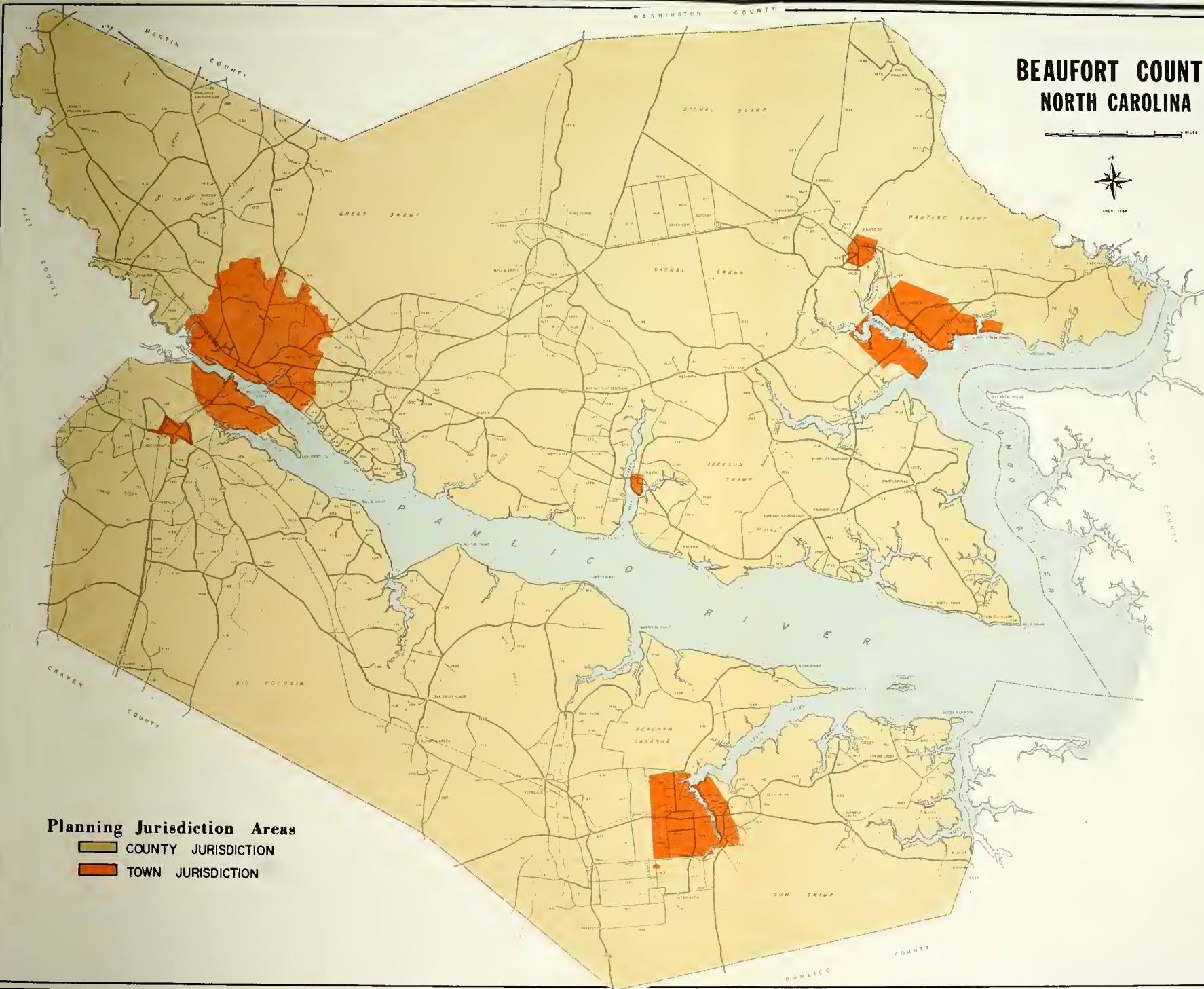
BEAUFORT COUNTY NORTH CAROLINA

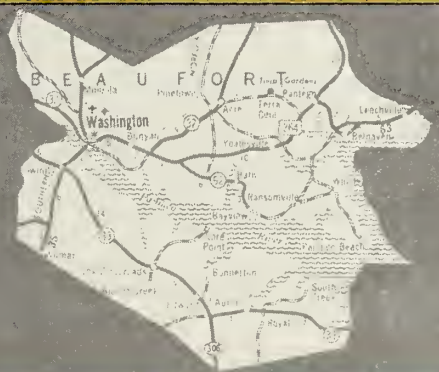
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1967

Planning Jurisdiction Areas
COUNTY JURISDICTION
TOWN JURISDICTION





NATURAL RESOURCES

CLIMATE

Beaufort County is blessed with a comparatively mild and comfortable climate especially in terms of human environmental comfort. Throughout the year, there are very few days with extreme temperatures. The Pamlico Sound bordering the county on the east and the Atlantic Ocean only 20 miles further modifies the extremes of both winter and summer.

On the average, approximately 48 inches of precipitation falls near Washington annually. Towards the Sound, average precipitation steadily increases until the average reaches 55 inches at the easternmost part of the county. Snowfall is very infrequent and occurs only in small amounts.

The mean temperature of Beaufort County is 62 degrees F. The highest temperature ever recorded is 106 degrees but the average temperature in July is only 80 degrees. The lowest temperature ever recorded is 0 degrees. However, the temperature seldom falls below 20 degrees, and the January average is 45 degrees. On the average, April through October is free of killing frosts. This gives the farmers of the county a frost free growing season of 214 days.

Except in the case of storms, winds seldom amount to more than calm breezes. The prevailing wind direction is southwesterly. The wind also blows north for four months from November through February and northeast September and October.

The climate of Beaufort County is very favorable for general field crops in the summer, and the winters are mild enough to be favorable for cover crops, hardy vegetables, and livestock. Wintertime is mild to the extent that outdoor recreation is prevalent in the area.

GEOLOGY¹

North Carolina is divided into three physiographic provinces: the mountain region; the piedmont region; and the coastal plain region. These provinces differ in topography, in the character of the underlying rocks, and in the occurrence and abundance of ground water.

The coastal plain occupies about 45 percent of the area of the state. For the most part, the coastal plain is less than 100 feet above sea level. Its eastern margin is indented by long tidal estuaries. From the ocean the land surface rises very gently at a rate of three feet per mile or less until it nears the western boundary of the province, where the slope steepens, and near the fall zone the relief may be 150 to 200 feet near the larger streams.

The entire county is mantled by surficial sands and clays of Quaternary age. This surface material is rarely more than 30 feet thick and in many places less than 10 feet thick. Underlying the surface deposits are beds of blue clay, marl, shells, and impure shell limestone that constitute the Yorktown formation of late Miocene Age. The Yorktown formation ranges in thickness from about 40 feet in the extreme western part of the county to as much as 200 feet in the extreme eastern part of the county. In the central and eastern parts of the county, the Yorktown formation is underlain by layers of phosphate sand that are separated by one or more shell beds. This unit ranges from a few feet to more than 10 feet in thickness. Individual beds of phosphate sand are as much as 20 feet thick. Underlying the upper and middle

¹North Carolina Department of Conservation and Development, Division of Mineral Resources, Bulletin Number 73, 1959, page 5.

Miocene deposits are shell limestones and interlayered calcareous sands of the Castle Hayne limestone of late and middle Eocene Age. This formation is about 60 feet thick near the western border of the county and perhaps as much as 250 feet thick along the eastern border of the county. The Beaufort formation of Paleocene Age, composed of agrilaceous sand, glauconitic sand, and marl, underlies the Castle Hayne limestone throughout most of the county. Two miles north of Washington, the formation is 35 feet thick and according to limited data, the formation thickens rapidly and is buried progressively deeper toward the east. Underlying the Beaufort formation are glauconitic sands and micaceous clays of the Peedee formation of later Cretaceous age. One mile west of Washington, the top of the Peedee has been penetrated at a depth of 158 feet below sea level. In eastern Beaufort County extrapolated data indicate that the top of the Peedee formation lies about 700 to 800 feet below sea level. Beneath the Peedee formation are older Cretaceous sediments that contain saline waters.

GROUND WATER

The stratified sand, gravel, and limestone formations of the Coastal Plain are potentially the most productive sources of ground water in North Carolina. The water is generally acceptable for most purposes although some wells yield waters that contain objectionable amounts of iron, hydrogen sulfide, or hardness; some waters are corrosive. In general, the best water from each formation is obtained from wells drilled in or near the outcrop area of the formation. As the formation dips toward the east, the water in it tends to become progressively more saline.

With the exception of the supply for the City of Washington, all public and private water supplies in Beaufort County are obtained from wells. Washington receives part of its water from Tranter's Creek located northwest of town. Surface sands of Quaternary age and near-surface sand and shell beds of the Yorktown formation furnish water to shallow dug wells and driven wells that extend to a depth of 30 feet. A yield of 2 to 30 gpm can be expected from shallow wells drilled into this material. Such wells are commonplace throughout the entire county.

In central and eastern Beaufort County, drilled wells obtain water from lenticular sands and shell beds in the Yorktown formation and from shell limestones and calcareous sands in the underlying Castle Hayne limestone. These wells range in depth from 100 to 300 feet and yield as much as 300 gpm. The depth of an individual well is largely determined by the area in which it is drilled, by the quantity and quality of water desired, and by the preference of the individual digger.

Several wells in central Beaufort County obtain water from the Beaufort formation. However, this aquifer is seldom utilized in the eastern and central sections of the county because of the abundance of water in overlying aquifers. Water below a depth of 30 to 50 feet in this area is under artesian pressure, and flowing wells are very common. Much of the land is only a few feet above sea level and the piezometric surface is generally within 15 feet of land surface or higher.

In western Beaufort County, water is obtained from the Castle Hayne limestone, the Beaufort formation, and the Pee Dee formation. The relative thinness of the Castle Hayne limestone in this part of the county limits its value as an aquifer. Where large quantities of water are desired, wells

must tap the Beaufort and Peedee formations, or if tapping the Castle Hayne limestone, the tap must be of large diameter. Yields of several hundred gallons per minute may be expected from deep wells in this area.

The chemical quality of ground water in Beaufort County is not uniform. Water from the surficial sands contains objectionable iron and is generally corrosive. Water from the shell beds and impure limestone layers of the Yorktown formation is moderately hard. Water from the shell limestone layers and calcareous sand layers of the Castle Hayne limestone is moderately hard to very hard and may contain objectionable amounts of hydrogen sulfide, particularly in the eastern sections of the county. Most of the water from the Beaufort and Peedee formations is soft, but may be hard if the water is emanating from calcareous strata. At Washington and Belhaven, several wells yield water relatively high in chloride. Available data indicates that the chloride probably results from a lateral infiltration of brackish surface water into the aquifer as the wells are pumped. Relocation of supply wells at a greater distance from brackish surface waters in these areas would result in a lower incidence of chloride content.¹

Until the phosphate mining operations began in Beaufort County, there was never any question that the ground water supply of Beaufort County was not completely adequate. After the mining operation became known, the Department of Water Resources became alarmed at the prospective influence of unlimited open-pit mining on the ground water supply of Beaufort County. Because of this, the Board of Water Resources requested that an evaluation

¹N.C. Department of Conservation and Development, Division of Mineral Resources, Bulletin No. 73, 1959.

of the potential impact of phosphate mining on ground water resources of Eastern North Carolina be conducted by an independent board of consultants.

The final report of the Board of Consultants supported the original contention of the Board of Water Resources that heavy withdrawals of water from the underground aquifers of the Coastal Plain can, unless properly controlled, adversely affect the quality and quantity of water available in the region for other present and future needs.

The Board of Water Resources and interested groups of citizens from Beaufort County led the fight for controls at the 1967 General Assembly. A substantial part of their requests was granted. This new statute did not render a death blow to the phosphate industry. On the other hand, it will insure the maximum feasible development of the phosphate industry while safeguarding the natural resources for total development of the county.¹

SURFACE WATER

Beaufort County is drained by relatively slow-moving streams that flow into the Pamlico and Pungo Rivers. These, in turn, empty into the Pamlico Sound. There is a great deal of swamp land in the county, although much swamp land has been converted into cultivated land by the construction of large drainage ditches.

The chemical character of surface waters is influenced in varying degrees by geochemical processes, rainfall, winds, tides, and stream pollution. Hurricane winds in 1955 forced salt water up the Tar River for a distance of

¹State of North Carolina, Department of Water Resources, "Evaluation of Potential Impact of Phosphate Mining on Ground Water Resources of Eastern North Carolina", January, 1967.







BEAUFORT COUNTY NORTH CAROLINA

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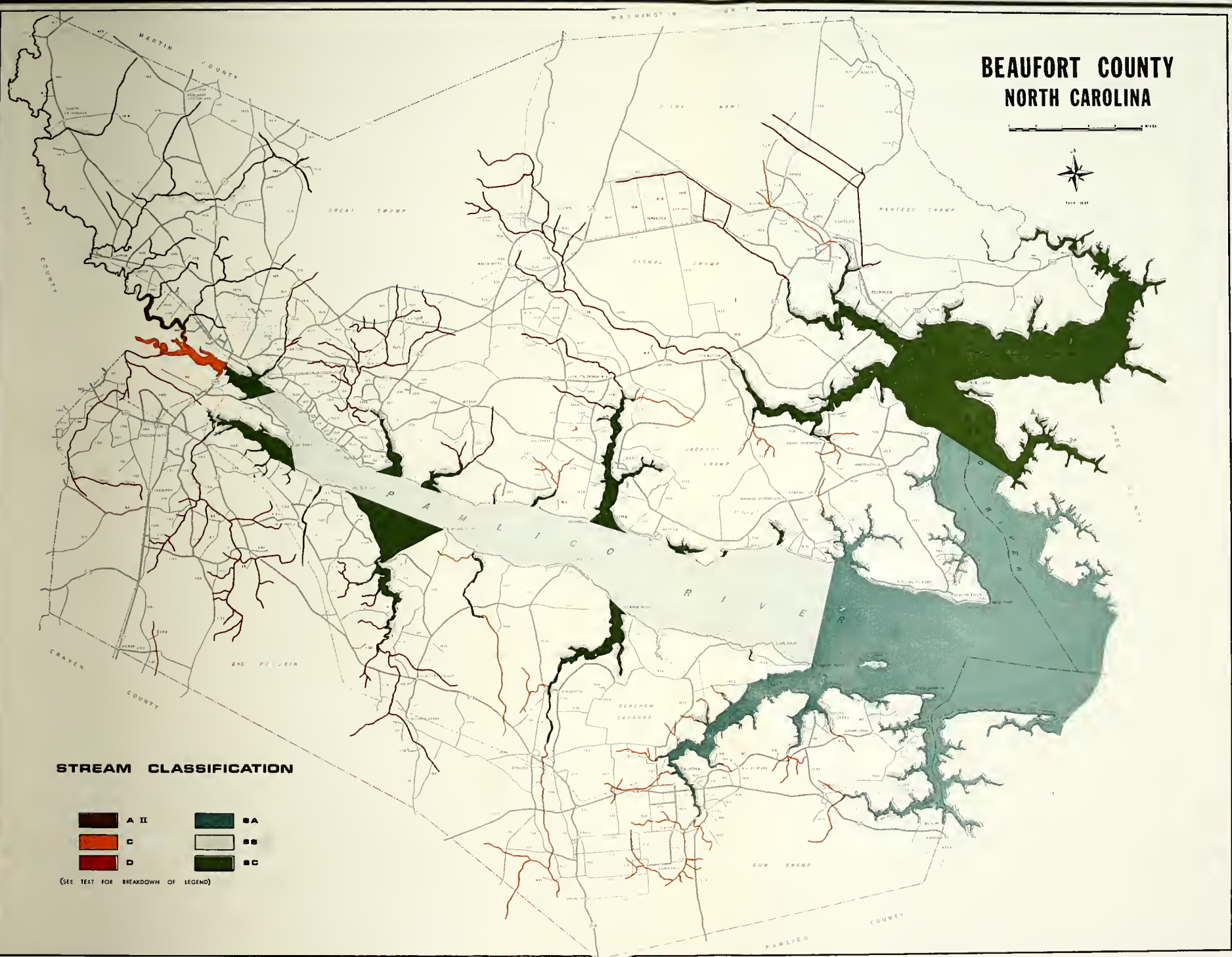


1924 1925

STREAM CLASSIFICATION

	A II		BA
	C		BB
	D		BC

(SEE TEXT FOR BREAKDOWN OF LEGEND)



ten miles upstream of Washington. Salt water remained at advanced points on the Pamlico River during most of 1955 due to the combination of prevailing winds and low rainfall in the watershed area.

Streams in North Carolina's Coastal Plain physiographical province carry sediments consisting of sand, clay, limestone, and marl. The color of the waters in these streams varies with the season and river discharge. Generally, the higher colors occur during periods of relatively heavy rainfall (late summer and early fall) when colored water and decaying organic matter are flushed from the swampy areas.

MINERALS

Beaufort County is underlain by a wedge of Tertiary and Cretaceous sediments which are 1,000 to 2,000 feet thick. The formations are covered nearly everywhere by the Pleistocene terrace deposits. These terraces are the outstanding physiographical features of this area and form irregular belts extending in a general northeast-southwest direction. The underlying rocks dip in a general eastward direction and consist of alternating layers of surficial sands and clays of Quaternary age and ranging from 10 to 30 feet in thickness.

Beds of blue clay, marl, shell, limestone that constitute the Yorktown formation, lie beneath these surficial deposits and range from 40 feet thick in the western part of the county to 200 feet in the county's eastern extreme. This Yorktown formation is underlain by layers of phosphatic sand that are separated by one or more indurated shell beds. This unit of phosphatic sand and indurated shell beds range from a few feet to more than 120 feet in thickness. Individual beds of phosphatic sand are as much as 20 feet thick.

BEAUFORT COUNTY NORTH CAROLINA

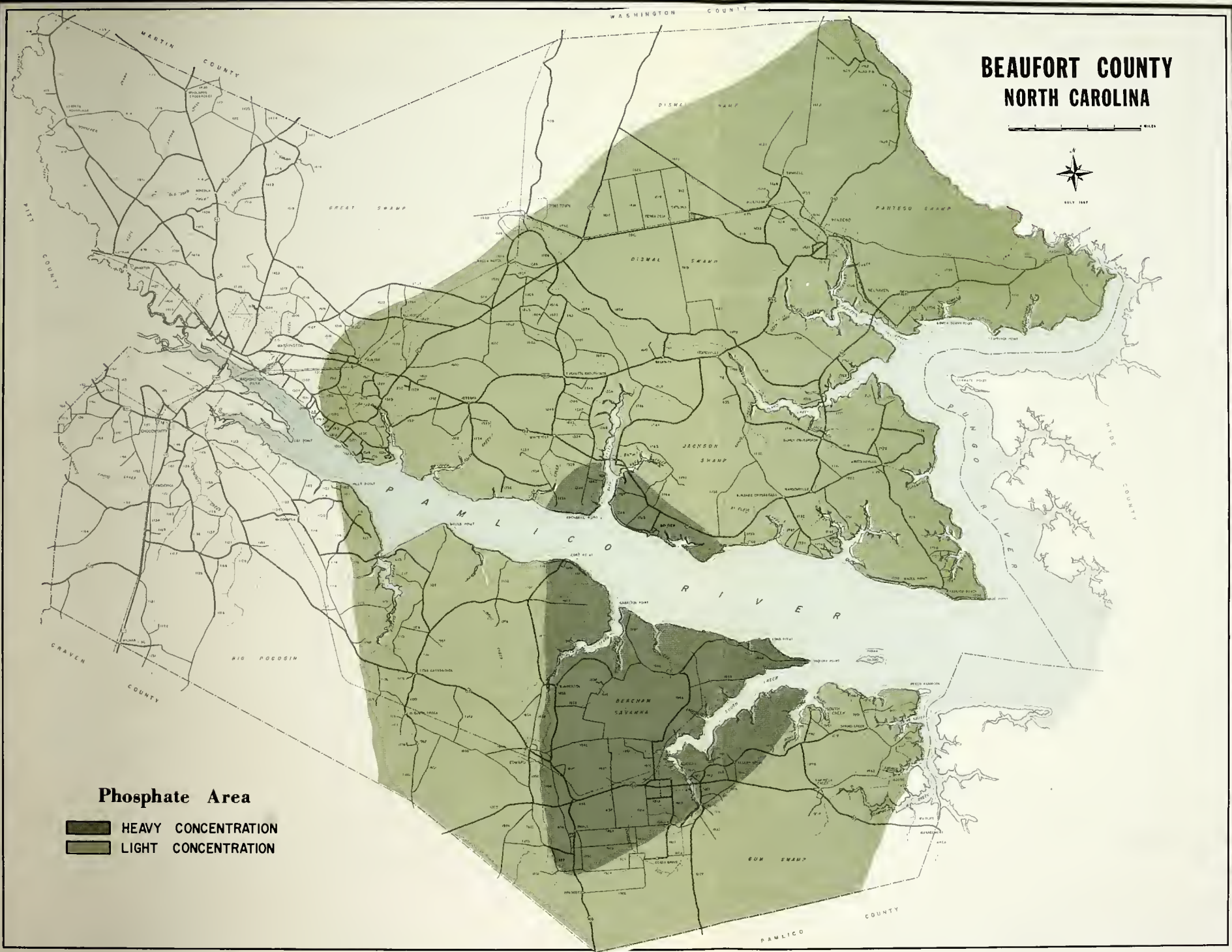
0 1 2 3 4 5 6 7 8 9 10 MILES



NOV. 1947

Phosphate Area

- HEAVY CONCENTRATION
- LIGHT CONCENTRATION



It has been demonstrated by studies conducted by mining corporations that there are approximately ten million tons of phosphate ore in the county that is economically feasible to mine. These deposits are found beneath an area covering approximately 700 square miles. The phosphate deposits in the Aurora area are found between 80 and 100 feet below the surface and range from 40 to 50 feet in thickness.

Underlying these deposits are shell limestones and interlayered calcareous sands of the Castle Hayne limestone of late Eocene age. This formation is about 60 feet thick near the western border of the county and perhaps as much as 250 feet thick along the eastern border of the county. The Beaufort formation of Paleocene age, composed of agrillaceous sand, glauconitic sand, marl, underlies the Castle Hayne limestone throughout most of the county. The thickness of the Beaufort formation is not documented. Underlying the Beaufort formation are glauconitic sands and micaceous clays of the Peedee formation of late Cretaceous age. No data regarding the thickness of this formation in Beaufort County are available. Beneath the Peedee formation are older Cretaceous sediments.

Before the advent of phosphate mining in the county, mining production in the county during the past decade had been limited to the production of sand and gravel for use in structural and paving concrete. Deposits of illmenite have also been discovered in the county, but, as of now, no mining has taken place.

SOILS¹

Basic to any long range planning program is a study of land potential for all land uses. Soil suitability for septic tanks should be considered before an area is developed with the use of septic tanks. Otherwise, a public health problem may be created. Some communities have severe sanitary problems because lots are too small for septic tanks to function properly. Load bearing capacity must be considered before a new road is planned or an area is designated as an industrial site. Soils are also considered in regards to suitability for camp sites, picnic areas, intensive play areas, general agriculture, woodlands, and pasturelands.

Beaufort County lies within the Coastal Plain soil province, and the soils are derived from unconsolidated sands and clays of sedimentary origin composed of materials brought down from the Piedmont Plateau and Appalachian Mountain regions and deposited on the sea floor in ancient times. These sediments have been more or less modified by drainage, oxidation, erosion, and the decay of plants, since their elevation is above water. The percolating rain water has carried much of the finer material down from the surface, and this, together with the action of streams and erosion, has resulted in the subsoils having a generally heavier texture than the surface soils. The red and yellow colors in many of the soils are due largely to the oxidation of the iron-bearing minerals contained in the soil. The dark-gray and black colors are the result of the decay of varying quantities of organic matter. The mottling in some of the subsoils is due largely to imperfect drainage

¹Information provided by the Soil Conservation Service, U.S. Department of Agriculture, Washington, North Carolina.

BEAUFORT COUNTY NORTH CAROLINA

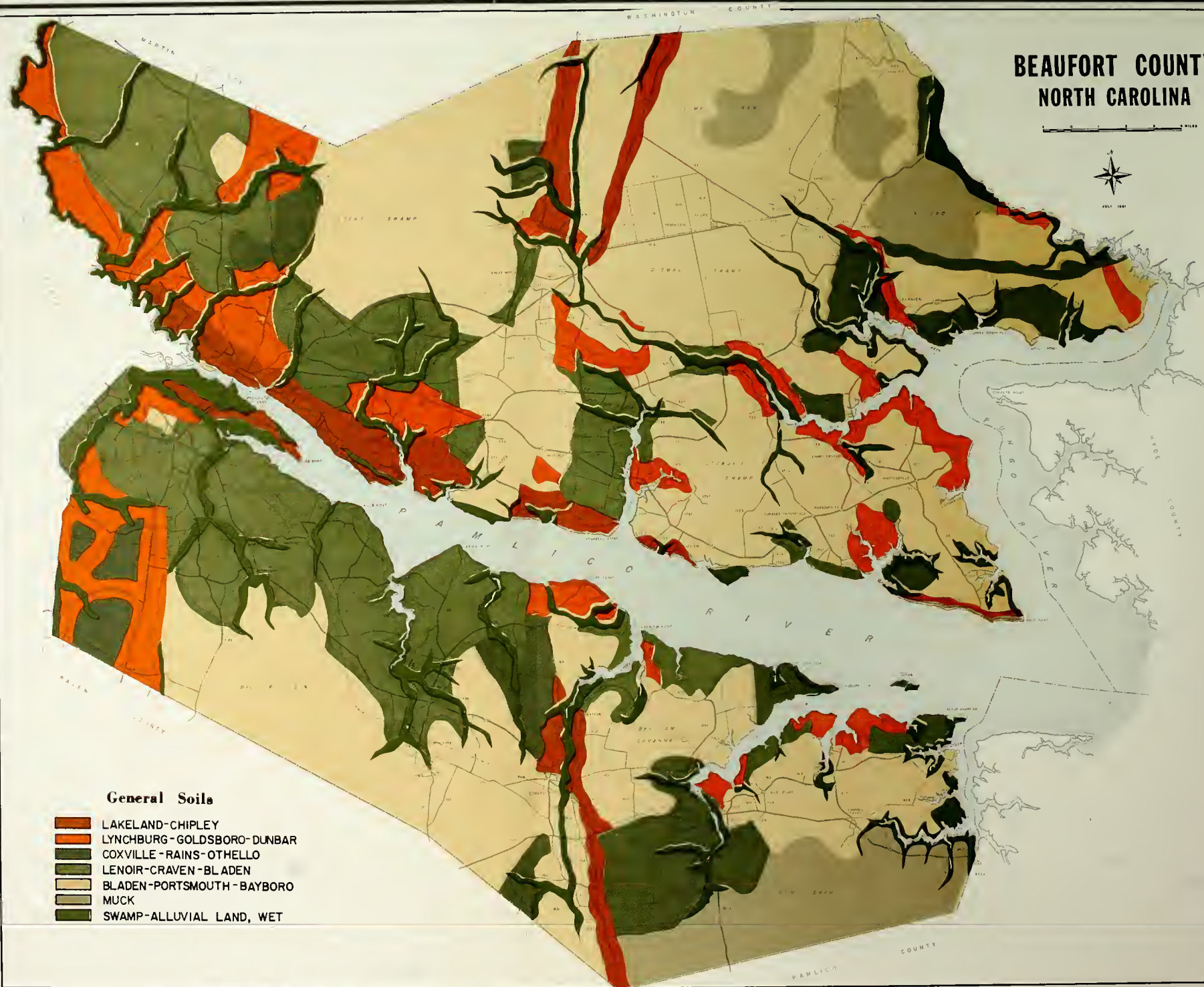
0 1 2 3 4 5 MILES



JULY 1961

General Soils

- LAKELAND-CHIPLEY
- LYNCHBURG-GOLDSBORO-DUNBAR
- COXVILLE-RAINS-OTHELLO
- LENOIR-CRAVEN-BLADEN
- BLADEN-PORTSMOUTH-BAYBORO
- MUCK
- SWAMP-ALLUVIAL LAND, WET



conditions, the subsoil being saturated at such frequent intervals that the iron-bearing minerals in the soil have been only partly oxidized. The elevation and drainage in different parts of the county have caused considerable difference in the soils.

All of these factors acting upon the original material have produced a number of different soils and varied soil conditions. The soils are grouped broadly into soil series, the soils of each series being similar in origin, color of the surface soil, color and structure of the subsoil, and in topography and drainage. The soil series are divided into soil types on the basis of texture. Seven soil series including fourteen soil types are recognized in Beaufort County. Each soil series is named for the major soil series within the association.

LAKELAND - CHIPLEY

This soil association is excessively to somewhat poorly drained, with sandy soils occurring on nearly level to gently sloping terrain.

This association occupies about 5 percent of the county. The areas are narrow and long. They are mainly along the Pamlico River; from Bonnerton south along N.C. 306 to the Pamlico County line; from Acre Station north along N.C. 32 to the Washington County line; and from Pinetown north along State Road 1506.

Lakeland soils make up about 45 percent of the association. They are excessively drained sands more than 60 inches thick. The Lakeland soils occur on the higher ridges within the association.

Chipleys soils make up about 35 percent of the association. They are somewhat poorly drained sands more than 60 inches thick. The Chipleys soils occur on the lower ridges within the association.

The rest of this association is made up of minor acreage of Maxton, Dragston and Osier soils.

About half of this association is cultivated or pastured, and the remainder is forested. The soils in this association are fairly well suited for the production of tobacco, peanuts, corn, soybeans, small grain, and pasture. Below average yields are obtained from corn and soybeans. Coastal bermuda pasture is fairly well adapted on the Lakeland. However, ladino clover and fescue pastures are not as well suited on the Lakeland soils. They are easily tilled and respond well to lime and fertilizer.

The major hazard in this association is two fold. The Lakeland soils are susceptible to wind erosion, are very low in fertility and are droughty. The Chipleys soils have a wetness hazard.

The major soils in this association have only moderate limitation for septic tank filter fields, foundation footings for large buildings (three stories or less), camp sites and picnic areas. Nearby water supply may be contaminated in the Lakeland soils. This association is one of the best sources of sand for the building trade.

LYNCHBURG - GOLDSBORO - DUNBAR

This association consists of moderately well drained to somewhat poorly drained soils occurring on nearly level to gently sloping terrain. These soils have a sandy surface and a friable sandy clay loam to a firm sandy clay subsoil.

This association occupies about 7 percent of the county. The area is small and occurs throughout the county. A large area is in the northwest next to the Tranters Creek. Another is in the southwest part of the county along N. C. 102, State Road 1152 and 1154; and south on U. S. 17 to the Craven County line.

Lynchburg soils make up about 35 percent of the association. They are somewhat poorly drained soils having a friable sandy clay loam textured subsoil with its clay content ranging from 18 to 35 percent. Color of the subsoil is yellowish brown to brownish yellow with gray mottlings appearing throughout the subsoil. Permeability is moderate.

Goldsboro soils make up about 25 percent of the association. They are moderately well drained soils having a friable sandy clay loam texture subsoil with its clay content ranging from 18 to 35 percent. Color of the subsoil ranges from yellow to yellowish brown, having gray mottlings appearing 20 to 30 inches from the surface. Permeability is moderate.

Dunbar soils make up about 20 percent of the association. They are somewhat poorly drained soils having a firm sandy clay textured subsoil with its clay content ranging from 35 to 45 percent. Color of the subsoil ranges from brownish yellow to olive yellow, with gray mottlings appearing throughout the subsoil. Permeability is moderately slow.

The rest of the association is made up of minor acreage of Duplin, Dragston, Craven, Lenoir, Coxville and Rains soils.

Over half of this association is cultivated or pastured, and the remainder is forested. The moderately well drained soils in this association are well adapted to growing tobacco, peanuts, corn, soybeans and pasture. The somewhat poorly drained soils are not as well adapted to tobacco and peanuts,

but are better for the growing of corn, soybeans, small grain and pasture. Soils in this association are easily tilled and respond well to lime and fertilizer. The major hazard in this association is wetness.

The major soils in this association have a moderate to severe limitation for septic tank absorption field, and slight to moderate limitation for camp sites, picnic areas and intensive play areas.

COXVILLE - RAINS - OTHELLO

This association consists of poorly drained soils on nearly level slopes having medium to fine textured surface horizons. The subsoils range from friable sandy clay loam to firm silty clay.

This association occupies about 8 percent of the county. It occurs throughout the county with the largest areas located north of Washington along State Road 1515; southwest corner of the county; and west and southwest of Aurora.

Coxville soils make up about 35 percent of the association. They are poorly drained soils having a gray firm sandy clay subsoil. The clay content ranges from 35 to 45 percent. Permeability is slow.

Rains soils make up about 30 percent of the association. They are poorly drained soils having a gray friable sandy clay loam subsoil. The clay content ranges from 18 to 35 percent. Permeability is moderate.

Othello soils make up about 15 percent of the association. They are poorly drained soils having a gray firm silty clay subsoil which is underlain by a coarser textured material at approximately 32 inches. Clay content ranges from 35 to 45 percent. Permeability is slow.

The rest of the association is made up of minor acreage of Lynchburg, Dunbar, Osier, Fallsington and Portsmouth soils.

Over half of this association is cultivated or pastured, and the remainder is forested. Corn, soybeans, small grain and pasture are the chief farming enterprises. These soils are fairly easily tilled and respond well to lime and fertilizer.

The major hazard in this association is wetness.

The major soils in this association have a severe limitation for septic tank absorption field, public sewerage system, camp sites, picnic areas and intensive play areas.

LENOIR - CRAVEN - BLADEN

This association consists of moderately well to poorly drained soils occurring on nearly level to strongly sloping ridges (0-15 percent). These soils have a medium textured surface and a very firm clayey subsoil.

This association occupies about 20 percent of the county. Three large areas are located in the county. One area is located in the northwest part of the county; another area is east and northeast of Washington; the third area starts at the Pitt County Line going east along U.S. 264 to Chocowinity and to Cox's Crossroads.

Lenoir soils make up about 40 percent of the association. They are somewhat poorly drained soils having a yellowish very firm clayey subsoil with gray mottlings throughout the subsoil. Clay content in the subsoil is more than 45 percent. Permeability is slow.

Craven soils make up 35 percent of the association. They are moderately well drained soils having a yellowish very firm clayey subsoil with gray mottlings appearing 20 to 30 inches from the surface. Clay content is more than

45 percent. Permeability is slow.

Craven soils make up 35 percent of the association. They are moderately well drained soils having a yellowish very firm clayey subsoil with gray mottlings appearing 20 to 30 inches from the surface. Clay content is more than 45 percent. Permeability is slow. The Craven soils occur on the stronger sloping ridges in the association.

Bladen soils make up about 15 percent of the association. They are poorly drained soils having a gray very firm clayey subsoil. Clay content is more than 45 percent. Permeability is slow. Bladen soils occupy the nearly level or depressed areas in the association.

The rest of the association is made up of minor acreage of Duplin, Dunbar, Coxville, Othello and Rains soils.

A little over half of this association is cultivated or pastured, and the remainder is forested. The soils in this association are suited for the production of tobacco, peanuts, corn, soybeans, small grain and pasture. The somewhat poorly drained soils are better suited for the growing of corn, soybeans, small grain, and pasture. The soils in this association are fairly easily tilled and respond well to lime and fertilizer.

The major soils in this association have a moderate to severe limitation for septic tank absorption field, public sewerage system, camp sites, picnic areas and intensive play areas.

The major hazard in this association is erosion on the stronger slopes and wetness on the nearly level slopes or depressions.

BLADEN - PORTSMOUTH - BAYBORO

This association consists of poorly to very poorly drained soils occurring on nearly level or slight depressions. Surface texture ranges from fine

sandy loam to mucky loam. The subsoils range from friable sandy clay loam to very firm clay.

This association occupies about 50 percent of the county. There are two large areas located in the county. One is northeast of Washington in the J & W Swamp and eastward and south to the Pamlico River only to have other small areas of different association cut into by way of ridges and streams. The other large area is located south of the Pamlico River; east of U.S. 17 eastward along the Craven County Line to the Pamlico County Line; going northeast to Goose Creek.

Bladen soils make up about 30 percent of this association. They are poorly drained soils having a gray very firm clayey subsoil with its clay content more than 45 percent. Permeability is slow.

Portsmouth soils make up about 20 percent of this association. They are very poorly drained soils having a black surface and a gray friable sandy clay loam subsoil. Clay content ranges from 18 to 35 percent. Permeability is moderate.

Bayboro soils make up about 17 percent of this association. They are very poorly drained soils, having a black surface and a gray very firm clayey subsoil. Clay content is more than 45 percent. Permeability is slow.

The rest of the association is made up of minor acreage of Hyde, Pocomoke, Coxville, Rutlege and Muck soils.

About half of this association is cultivated or pastured, and the remainder is forested. The soils in this association are suited for the production of corn, soybeans, small grain and pasture. They are easily tilled and respond well to lime and fertilizer.

The major hazard in this association is wetness.

The major soils in this association have a severe limitation for septic tank absorption field, public sewerage system, camp sites, picnic areas and intensive play areas.

MUCK

Within this association are very poorly drained soils on nearly level to slight depressions having an organic surface layer. Texture of the mineral layer below the organic surface ranges from loamy sand to clay.

This association makes up about 8 percent of the county. Three areas occur in the county. One is located northwest of Wilkinson; another is northeast of Pantego, and the third is south of Aurora next to the Pamlico County Line.

Muck is the major soil in this association. Muck soils make up approximately 85 percent of this association. They are very poorly drained, having an organic surface ranging from 10 to more than 60 inches thick. The layers below the organic ranges from a very friable sandy textured material to a very firm clay. The water table is usually very high in these soils. Permeability of the mineral layers ranges from rapid to slow.

The rest of the association is made up of minor acreage of Hyde, Portsmouth, Bayboro, Rutlege, Pocomoke and Alluvial land, wet soils.

About 30 percent of this association is cultivated and pastured, and the remainder is forested or burned over brush. Corn and soybeans are the two main crops grown on these soils. When drained, the till is fairly good. They will respond fairly well to good management, especially drainage and fertilization. Since they are high in organic matter, soils in this association have a trace element deficiency.

Major hazard is wetness and when too dry, the organic surface layer will burn.

The major soils in this association have a severe limitation for building sites, camp sites, picnic areas, and septic tank absorption field, and public sewerage system.

SWAMP - ALLUVIAL - WET

This association consists of poorly drained to very poorly drained soils on nearly level to slight depressions having a surface texture range from loamy sand to loam. Texture of the subsurface layers ranges from loamy sand to clay.

This association makes up about 2 percent of the county. It occurs throughout the county in narrow long shapes, mostly along the major streams and drainage ways.

Swamp soils make up about 50 percent of the association. They are poorly to very poorly drained, soil materials are mixed alluvial deposits ranging from loamy sand to clay. They are under water most of the time.

Alluvial land, wet soils make up about 40 percent of the association. They are poorly drained, soil materials are mixed alluvial deposits ranging from loamy sand to clay. They are under water (flooded) part of the time. Alluvial land, wet soils are usually located in the smaller drainage ways or between the swamp soils and soils of higher elevation.

The remainder of the association is made up of minor acreage of Bladen, Hyde, Bayboro, Portsmouth and Marshland soils.

Almost all of this association is in forest, mostly hardwood or cypress. Soils in this association are not well suited for cultivation because of the high water table and flooding hazard. They are principally used for wildlife.

The major soils in this association have a severe limitation for septic tank absorption field, public sewerage system, camp sites, picnic areas and intensive play areas.




BEAUFORT COUNTY NORTH CAROLINA

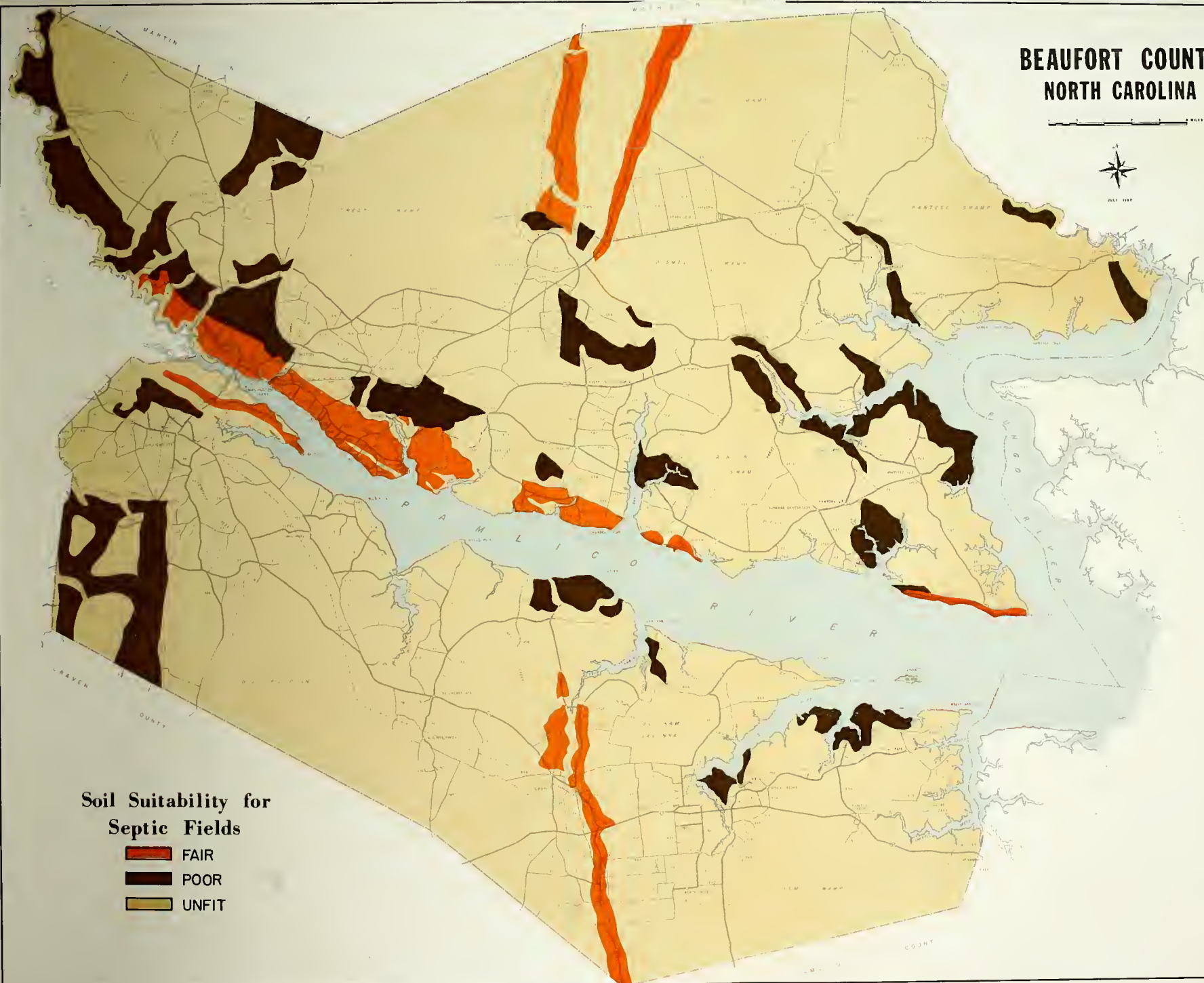
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JULY 1987

Soil Suitability for Septic Fields

-  FAIR
-  POOR
-  UNFIT



Soil Interpretations
General Soil Map
Beaufort County, N. C.

LIMITATIONS FOR

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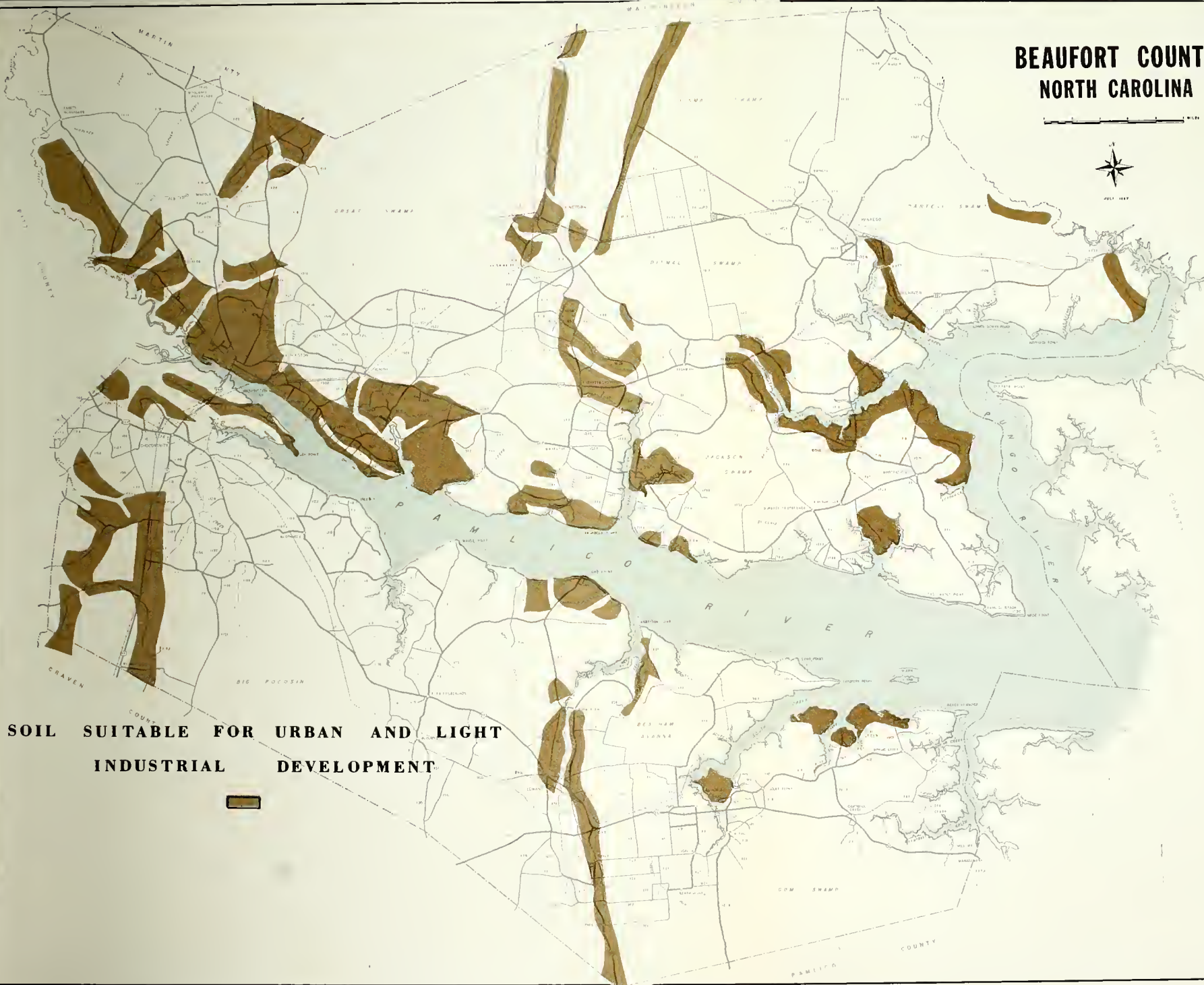
SOURCE: U.S. Department of Agriculture, Soil Conservation Service
Raleigh, North Carolina

BEAUFORT COUNTY NORTH CAROLINA

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JULY 1947



SOIL SUITABLE FOR URBAN AND LIGHT
INDUSTRIAL DEVELOPMENT



WETLANDS AND WILDLIFE¹

There are four types of wetlands in Beaufort County: bogs, wooded swamps, shallow fresh marsh, and irregularly flooded salt marsh. The largest type is bogs which consist of 119,700 acres. The next largest is wooded swamps with 21,850 acres. Shallow fresh marsh and irregularly flooded salt marsh have 4,050 and 450 acres, respectively.

Bogs are largely confined to counties that lie within 40 miles of coastal waters. Soils are moist to waterlogged, often flooded in winter months. Typical plants are pond pine, loblolly pine, black gum, red maple, bamboo briar, huckleberry, toothache grass, and spagum moss.

The bogs have excellent refuge value for big game but are of no value to waterfowl. The bog acreage supports a moderately heavy population of deer, numerous wildcats, a few raccoons, opossums, and gray foxes. In addition, a few bears inhabit the bogs in the southern part of the county.

Most wooded swamp is located largely within 60 miles of the coast. Water in most swamps is brown-stained with a pH near six. Dense shade eliminates much of the herbaceous vegetation of value to waterfowl and muskrats. These sites dry up during most growing seasons except in areas which border coastal rivers and sounds. Wooded swamps are often flooded in winter by one to four feet of water. Predominant forest tree species are tupelo gum, black gum, cypress, red maple, and ash. Logged-off forest sites contain mostly herbaceous vegetation.

¹North Carolina Wetlands, North Carolina Wildlife Resources Commission, Raleigh, North Carolina, 1962, p. 39.





BEAUFORT COUNTY NORTH CAROLINA

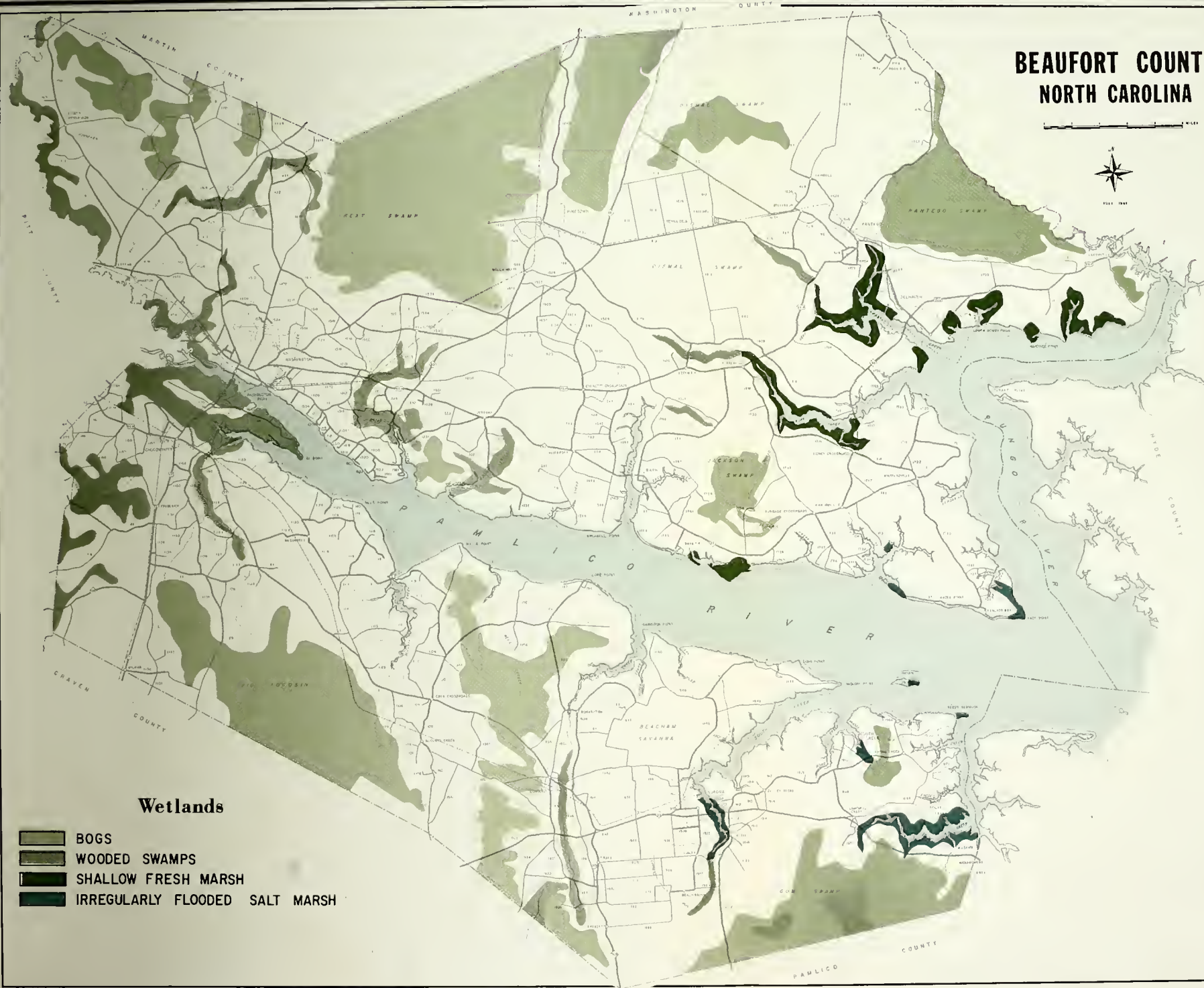
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1987

Wetlands

-  BOGS
-  WOODED SWAMPS
-  SHALLOW FRESH MARSH
-  IRREGULARLY FLOODED SALT MARSH



The swamps support very little big game but provide good hunting for raccoons, gray squirrels, and marsh rabbits. The rabbits, however, are seldom hunted. Woodcocks, also seldom hunted, are present in small numbers in many swamps.

The swamp along the Tar River near Washington has a high development potential for waterfowl and muskrats. Logged-off areas support an abundance of food; namely duckweed, burreed, smartweed, duck potato, frogbit, and oat-tail. Clearings maintained free of woody vegetation would produce even larger quantities of food for waterfowl and muskrats.

The swamps support a large number of puddle ducks. At the mouth of the Tar River near Washington, the swamps support about 500 to 2,000 puddle ducks. These ducks are hunted heavily. Ducks and geese frequenting marsh and shallow water near or along the Pamlico and Pungo Rivers provide a small amount of hunting.

Most of the irregularly flooded marsh type borders the west shore of the Pamlico Sound. Although it comprises only 4,050 acres, about half of this type of wetland found in the state is in Beaufort County.

This area has the best development potential for waterfowl of any of the four marsh types. The construction and development of diked areas in the irregularly flooded marsh type would attract and hold many thousands of waterfowl that normally winter further to the south.



TRANSPORTATION

TRANSPORTATION

In order for any area to experience substantial economic growth, it must have a transportation system which is adequate for the rapid and economic movement of people and commodities, both within the area and to and from the area. To a limited extent, highway, railroad, water, and air transportation are available to and from Beaufort County.

HIGHWAY TRANSPORTATION

Highway transportation is provided east-west by U.S. Highway 264 and N.C. Highway 33; and north-south by U.S. Highway 17, N.C. 32, and N.C. 306. The two principal routes are U.S. Highway 264 and 17. By modern standards, these two-lane routes do not provide adequate highway connections with surrounding population centers. However, this situation may be remedied in the future.

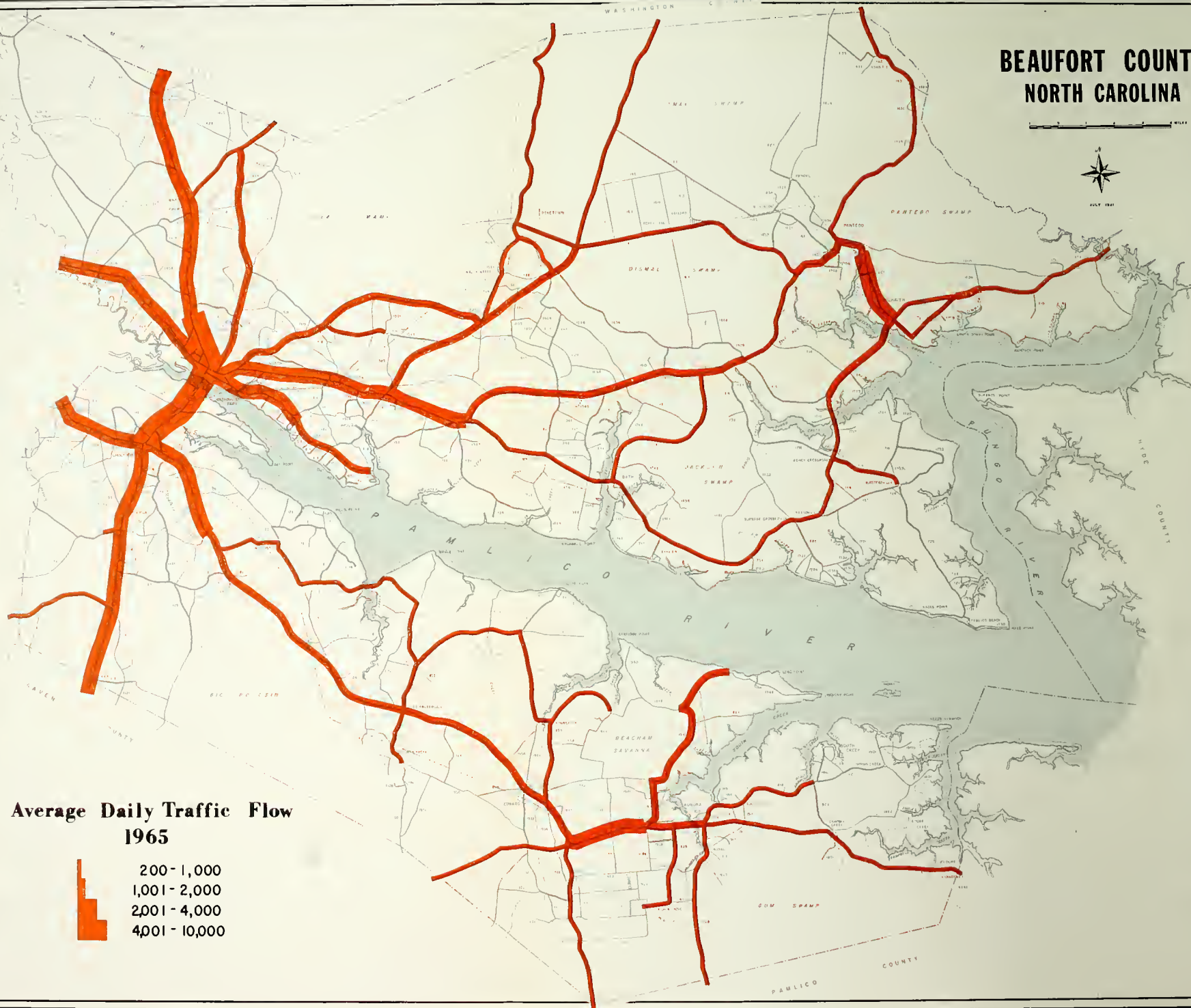
Various groups in the area are beginning to promote the development of four-lane highways, both north-south and east-west. Two alternative proposals have been voiced concerning a north-south route. One proposal is the four-laning of U.S. Highway 17 through Eastern North Carolina, and the other is a new Interstate route lying to the east of Edenton, Plymouth, Washington, and New Bern. Either route would serve a large portion of the Eastern coast of the United States. In the east-west direction, it has been proposed that either U.S. 264 or U.S. 64 be four-laned from the coastal area to Raleigh. The four-laning of 264 would be more beneficial to Beaufort County. However, either of these routes would provide easy access to markets in the Piedmont Crescent. It has been predicted that the Raleigh-Wake County Metropolitan Area will be the most rapidly growing metropolitan area in North Carolina during the next few years. Improvement of either of the routes mentioned above would enhance the economic environment of Beaufort County.

BEAUFORT COUNTY NORTH CAROLINA

0 1 2 3 4 5 MILES



JULY 1961



**Average Daily Traffic Flow
1965**



200 - 1,000
1,001 - 2,000
2,001 - 4,000
4,001 - 10,000

Within Beaufort County, highway connections are less than adequate. Since the Pamlico River, which splits the county into two parts, is bridged in only one place, in the extreme western section, it is difficult for people in the eastern end of the county to travel from one side of the river to the other. To drive northeast from Aurora to Belhaven, a motorist must first drive 30 miles west to Washington. The lack of an adequate means of crossing the river has placed a severe handicap on the growth potential of Eastern Beaufort County.

In 1965, recognizing the need for a public transportation facility across the eastern part of the river, the North Carolina Highway Department began operating a ferry between a point east of Bayview on the northern bank of the river and a point near Lees Creek on the southern bank. However, the ferry, which carries 22 cars at one and one-half hour intervals, is entirely inadequate for the purpose of providing quick passage from one side of the river to the other. In addition, the ferry is very expensive to operate. These facts make it probable that a bridge replacing the ferry can be economically justified, and that, with sufficient public interest and support, a bridge will be built within the next few years. Such a bridge would have a great impact on the development of the eastern end of Beaufort County.

RAILROAD TRANSPORTATION

Beaufort County is served by both the Seaboard Coast Line Railroad and the Norfolk-Southern Railroad. A branch line of the Seaboard Coast Line serves Washington. The Norfolk-Southern serves the entire county with its main line through Chocowinity, Washington, and Pinetown and branch lines serving Pantego, Belhaven, and Aurora, and the Texas Gulf Sulphur phosphate

mining complex at Lees Creek. Although no passenger service is available, railroad service in the county is an asset for future economic development.

AIR TRANSPORTATION

Beaufort County has no regularly scheduled commercial airline service. However, commercial airline service is available at New Bern, 35 miles to the south of Washington on U.S. 17. Beaufort County is served by the Washington Municipal Airport at Washington which has two 5,000 foot long runways, one 4,000 foot long paved runway and paved taxiways and aprons. In addition, a 2,600 foot long grass airstrip is located at Belhaven. The Washington airport is well equipped to handle business and pleasure aircraft. However, it does not have enough land space. The City of Washington, at present, is studying the alleviation of this problem either through zoning or land acquisition. In addition to this public facility, Texas Gulf Sulphur maintains a paved runway of 5,000 feet at Lees Creek for their private use.

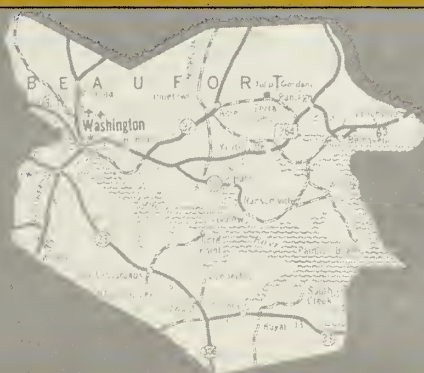
WATER TRANSPORTATION

Although Beaufort County is split by the wide Pamlico River, present water transportation facilities are limited. A 12 foot channel maintained in the Pamlico River connects the City of Washington with the Intracoastal Waterway which passes through the eastern end of the county. Bulk cargo is moved to and from the county over this route. This route is utilized to move phosphate products from the facilities at Lees Creek to the port at Morehead City, where a multi-million dollar phosphate storage and loading complex is being constructed. This facility will serve the phosphate industry for the next few years. However, with extensive development of the phosphate industry and allied industries, a more adequate means of exporting phosphate products

and importing raw materials will be needed. There is a definite possibility that this need will be met by the construction of a deep-draft shipping channel through part of the Pamlico River and the Pamlico Sound to the Atlantic Ocean.

In October, 1964, Congress authorized funds for the U.S. Corps of Engineers to study the feasibility of providing a deep-draft channel from the Pamlico River to the Atlantic Ocean. This study is nearing completion and will be available in a few months. If a channel is economically justified, the next major step will be authorization and funding of the construction by Congress. If authorized, a deep-draft channel would be completed by 1978.

As is the case with any navigation project, justification of the proposed channel is the savings that would accrue over other modes of transportation. It is doubtful that the channel would be justified under present conditions with only one company processing phosphate rock for shipment. However, it is probable that addition of another major mining and processing complex or developments by allied industries would add sufficient prospective commerce to justify a deep-draft channel from the vicinity of Lees Creek to the Atlantic Ocean. If constructed, this channel will add to the economic potential of the entire northeastern section of North Carolina.



COMMUNITY FACILITIES

COMMUNITY FACILITIES

A major factor in the location of new residences, commercial establishments, and industries is the location, adequacy, and effectiveness of public services such as water and sewerage coverage, police protection, and fire protection. Therefore, in order to determine the location of future uses of land, these factors must be analyzed.

FIRE PROTECTION

There are six fire departments in Beaufort County; five are in incorporated towns and the other in the unincorporated community of Pinetown. Five of these departments are operated exclusively by volunteers. The only compensated firemen are the seven men paid by the City of Washington.

The existing departments and their effective radii are shown on the table at the bottom of the page. By studying this map and the generalized land use map on page 51, it is determined that approximately 50 percent of the people of Beaufort County have very limited or no fire protection. The two largest concentrations of people with limited service are the Town of Pantego (population 262) and the unincorporated community of Edward (population 112).^{*} Pantego presently is considering paying Belhaven for fire protection, but it is also considering the possibility of purchasing its own tanker truck.

Location of Equipment	Tank Trucks	Pumper Trucks	Rescue Vehicles	(Fulltime) Firemen	(Volunteer) Firemen *	AIA Fire Rating
Aurora		1			25	9
Bath	2	1			24	9
Belhaven		2			25	8
Pinetown	1				10	10
Washington	1	7	1	7	85	6

* U.S. Census of 1960.

POLICE PROTECTION

The citizens of Beaufort County are protected by three types of law enforcement agencies; state patrol, sheriff's department, and local police departments. The highway patrol has seventeen officers assigned to five eastern counties including Beaufort. There is a patrol station in Chocowinity that has a communications system. The State Patrol lends assistance to the local police forces when necessary.

The Beaufort County sheriff has six deputies. These deputies have attended law enforcement training courses in Greenville and Chapel Hill. A generally accepted standard is one deputy for every 5,000 persons. At present there is a ratio of one deputy for every 6,000 persons. It would be necessary to hire one additional deputy to meet the accepted standard. By the end of the twenty year planning period, approximately four additional deputies will need to be added.

Four towns in the county have local police departments. Washington has twenty officers, Belhaven has four, and Chocowinity and Aurora have one policeman each. In order to comply with accepted standards, a town should have one policeman for every 500 citizens. Washington had an adequately manned department by the 1960 census, but if recent population estimates of 12,000 are accurate, the city needs to employ four additional officers.

<u>LOCATION</u>	<u>FORCE SIZE</u>	<u>PATROL CARS</u>
Beaufort County	6	6
Aurora	1	1
Belhaven	4	1
Chocowinity	1	1
Washington	20	3

WATER AND SEWERAGE FACILITIES

Two other important factors affecting land use decisions are the areas served by public water and sewerage systems. Land that is served by either or both of these facilities is much more attractive for development purposes. For example, no parcel of land is considered a prime industrial site unless it is served by these two services. There are three towns in the county that have public water and sewerage systems: Washington, Belhaven, and Aurora. Washington extends water and sewerage coverage outside the city limits in order to serve a nearby industry. Otherwise, there are no extraterritorial water or sewer lines in the county. Chocowinity will have a water system in a few years. It has received an assistance grant from the Federal Government. Chocowinity plans later to install a sewerage system as soon as it can meet the statutory debt limitation.

The county has received a grant from the Farmers Home Administration for a county-wide water and sewer study. It is hoped that this study will be relied upon when future extensions of existing systems or new facilities are installed.

NATURAL GAS

Natural Gas lines extend into Beaufort County from Greenville to serve the City of Washington. No other area in the county is presently served by natural gas except a small area around Washington. The gas lines could be extended to any immediate area of Washington whenever feasibility is shown.

Two years ago, North Carolina Natural Gas conducted a study in order to determine the feasibility of extending a gas line to Aurora in order to serve the Town of Aurora and the Texas Gulf Sulphur phosphate mining operation at Lees Creek. This study proved to be negative. However, another study

is now in process. This study is expected to prove feasible because of the addition of operations by North Carolina Phosphate near Aurora in the very near future. If this extension is installed, the Aurora area will be much more attractive to industrial prospects.

MEDICAL FACILITIES

Beaufort County has a relatively good medical situation. It has two hospitals, a community clinic, an adequate supply of doctors, and a good public health department.

Beaufort County Hospital is a modern, well-equipped institution with 112 beds and 15 bassinets. The hospital's service facilities consist of four operating rooms, one recovery room, two delivery rooms, one labor room, an emergency and fracture room, a diagnostic x-ray laboratory, x-ray therapy facilities, a clinical laboratory and a laundry. The medical staff is highly specialized and consists of four surgeons, two obstetricians, three pediatricians, one radiologist, one orthopedist, one ophthalmologist three internists, and four general practitioners. Other members of the staff include 26 registered nurses, 23 practical nurses, and eight technicians.

An extensive, two million dollar expansion of the present facilities is now under construction. After the construction is completed, the Beaufort County Hospital will be able to provide 64 additional beds. Also included in the expansion program are two operating rooms, a lab, and five new treatment rooms.

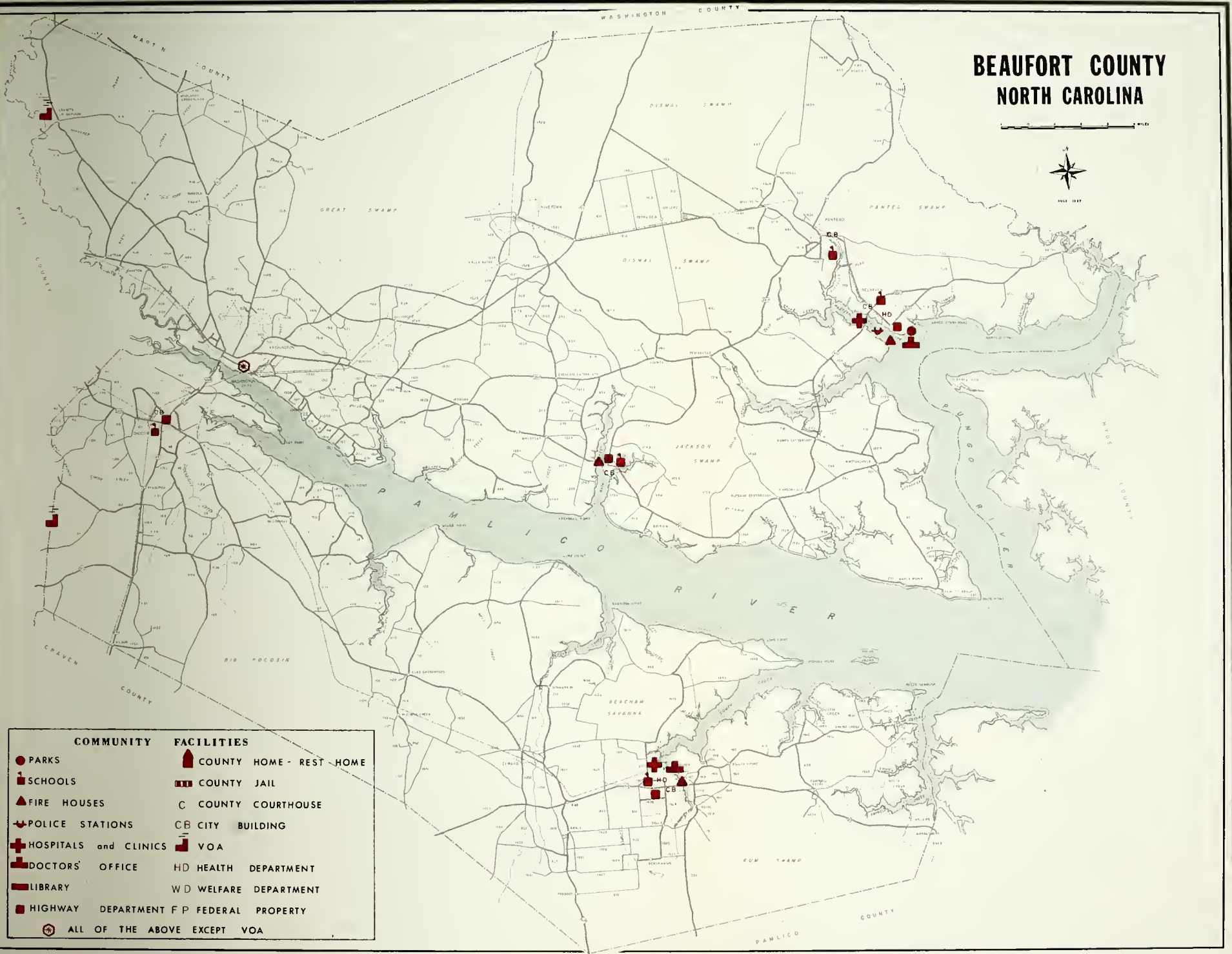
The Pungo District Hospital is a non-profit institution with 37 beds and 10 bassinets. Its staff is comprised of one general practitioner, six registered nurses, two practical nurses, an x ray technician, and one pharmacist. The hospital also operates an ambulance.

BEAUFORT COUNTY NORTH CAROLINA

0 1 2 MILES



1962 1977



COMMUNITY FACILITIES

- PARKS
- SCHOOLS
- ▲ FIRE HOUSES
- ✚ POLICE STATIONS
- ✚ HOSPITALS and CLINICS
- DOCTORS' OFFICE
- LIBRARY
- HIGHWAY DEPARTMENT
- ⊕ ALL OF THE ABOVE EXCEPT VOA
- COUNTY HOME - REST HOME
- COUNTY JAIL
- C COUNTY COURTHOUSE
- CB CITY BUILDING
- VOA
- HD HEALTH DEPARTMENT
- WD WELFARE DEPARTMENT
- FP FEDERAL PROPERTY

Aurora's John B. Bonner Clinic has six beds and two bassinets and is staffed by one general practitioner and three registered nurses. In addition, there are three rescue squads operating in the county. These are at Aurora, Belhaven, and Washington. Each has a rescue vehicle and provides emergency rescue, ambulance, and first aid services throughout the county.

Beaufort County Health Department has centers in Aurora, Belhaven, and Washington. The health center in Washington holds regular immunization, blood test, prenatal, well-baby, venereal disease, chest x-ray, tuberculosis, and food handlers clinics. The Aurora and Belhaven centers hold scheduled clinics for prenatal, well-baby, immunization, and blood tests. The health department employs a health director, three sanitarians (one part-time) and seven public health nurses.

As stated previously, Beaufort County has a good supply of doctors. The following is a listing of the medical doctors in the county, including the staffs of the hospitals and the health departments: nine dentists; seven general practitioners; three internal specialists, surgeons, and obstetricians; two oculists, dermatologists and obstetricians; one psychiatrist, ophthalmologist, radiologist, and chiropractor.

After any industrial prospect has surveyed an area to determine the availability of certain basic needs and facilities as labor supply, site, and transportation, livability becomes very important, when the final choice is made.

Some of these major considerations are cultural activities, schools, and medical facilities. Based upon the facts mentioned above, Beaufort County is in a relatively good position in this area.



LAND USE ANALYSIS

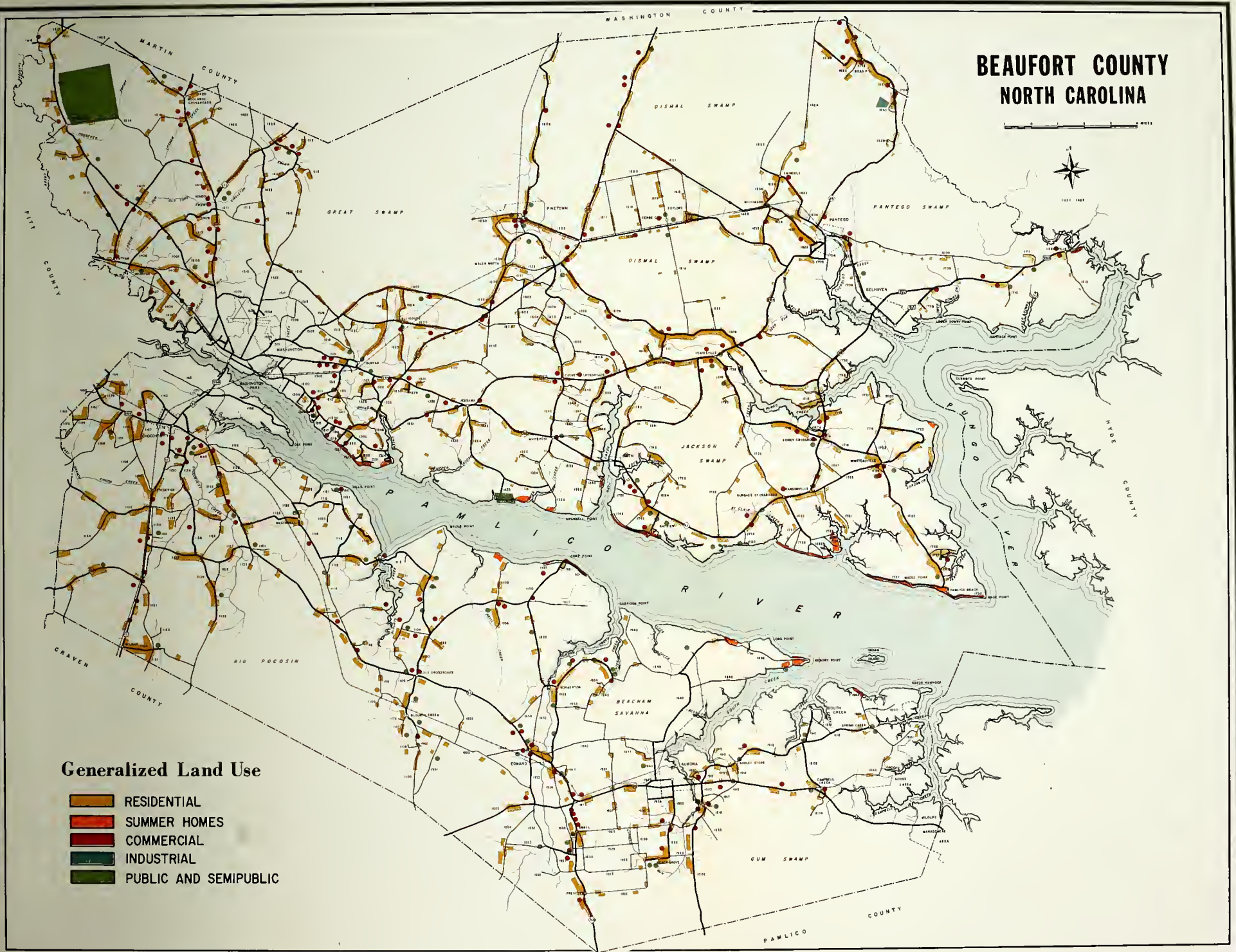
BEAUFORT COUNTY NORTH CAROLINA

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



Generalized Land Use

- RESIDENTIAL
- SUMMER HOMES
- COMMERCIAL
- INDUSTRIAL
- PUBLIC AND SEMIPUBLIC



LAND USE ANALYSIS

In order to determine land use patterns and identify land use problems, an analysis of all land use in the county has been conducted. As the first step, a detailed land use survey was made of the county in August of 1967. The general results of this survey is shown on the Generalized Land Use Map. For the purpose of analysis, land uses are divided into seven categories: residential, commercial, industrial, public and semi-public, transportation, forestry, and agriculture. Examples of good land use, incompatible land uses, and unsightliness were noted at the time of the survey. The information gathered from this survey has been tabulated and analyzed. The following is a discussion of this analysis.

RESIDENTIAL

Approximately two-thirds of the population of Beaufort County lives outside of incorporated towns. The residential pattern is similar to the pattern that exists in most eastern North Carolina counties. Except for strip development along the roads near the towns, almost all the residences are agriculturally oriented and are single family structures. A very few of the homes in the county are multi-family dwellings. Most of these are situated near towns. The only exceptions are two multi-family structures with eleven units built to house migratory laborers. These structures are totally unfit for human occupancy.

There are 7,445 residential units in Beaufort County. On the average, each residence makes use of approximately one-third of an acre. Based on this estimate, there are approximately 2,500 acres of residential land use in the county.

Included in the above figures are 655 vacation homes and 720 mobile homes. Vacation homes range from modest cottages to expensive brick houses. These structures are located mainly along the Pamlico and Pungo Rivers, and South, Blounts, Bath, and Pungo Creeks. Most of them are clustered in several developments. The major clusters are at Pamlico Beach, Hickory Point, Wades Point, and Bayview. None of these areas are the equivalent of a well-planned subdivision. The major problems are very small lots, ill-shaped lots, narrow streets, and mixture of structure values. The lots, in most cases, are very small. The intent of the developers is to provide only enough space for a small structure and to provide enough water access to satisfy the boating needs of the buyer. This tradition does not seem to disturb the buyer, unfortunately. The demand is still tremendous. Unless subdivision regulations are adopted, the tremendous potential of the waterfronts will be turned into a continuing series of substandard developments because nearly all of the usable land along the rivers and creeks will be developed during the planning period.

There are some very nice vacation homes in the county. However, very few of these nice homes are located in the same place. Usually they are found intermixed with wooden cottages and mobile homes.

As mentioned previously, there are 720 mobile homes located in the planning area. Approximately 50 of these mobile homes are located within waterfront subdivisions. Some of these present a problem. However, many of them, at present, are not considered a problem because they are at least as valuable as their neighbors and are located on the same size lots. Only about 50 additional mobile homes are stationed within mobile home parks. Therefore, a little over 600 mobile homes are scattered throughout the county.

Generally, they have a detrimental effect upon the appearance of the countryside. Also, many are poorly located. The most extreme mislocation is a mobile home parked within 75 feet of a large, attractive, brick house near Chocowinity. Comparable situations are found throughout the county. However, most cases of nonconformity are not as severe as this situation.

The majority of the residential development in the county is agriculturally oriented. This type of residential use falls into two distinct categories. One of these categories can be labeled "landowners houses" which, for the most part, includes homes with pleasing appearances. On the other hand, the contrastingly different classification of "tenant houses" includes homes which are mostly uncared-for. The landowners do not seem concerned about the quality of their tenant houses even when they are near their own homes. Apparently, they do not realize that surrounding conditions have an effect upon their own properties.

Included among these tenant houses are 285 buildings that present an aesthetic problem to the county. These are old buildings that are too dilapidated to ever be used for occupancy. The demand for unskilled farm laborers has declined drastically in recent years. Landowners, understandably, have decided that maintenance of these structures is an unnecessary expense. On the other hand, none have seen fit to demolish the buildings. Some are used to store various items from time to time. These buildings are among the most unsightly things in the county.

Housing Conditions

One of the most important characteristics of the housing supply in Beaufort County is its quality. An important measure of the quality is external appearance. During the land use survey in August of 1967, a housing

condition study was made for Beaufort County by use of a windshield survey. Factors used to determine the physical classification of a dwelling were (1) appearance and structural condition of main and auxiliary buildings, (2) lot size and location of structures in relation to setbacks and adjoining properties, and (3) upkeep of properties.

The houses of Beaufort County were all adjudged in one of three categories:

(1) Standard: Dwelling units which are average or above and need only normal maintenance to retain their present status.

(2) Deteriorating: Dwellings in need of rehabilitation to prevent further decline, requiring structural alterations or extensive repair work.

(3) Dilapidated: Dwelling units which have deteriorated to the point where it would be uneconomical to restore them.

Shown in the following table is the physical condition of the houses in Beaufort County. Mobile homes and vacation homes are not rated. Both of these units are too difficult to objectively judge solely by external appearance because, for the most part, they all look alike. In addition, vacation homes are not dwelling units. They merely shelter vacationers for a short duration of time.

CONDITION OF HOUSING
(Non-Incorporated Area)

	<u>Number</u>	<u>Percent</u>
Standard	2,432	42
Deteriorating	2,234	39
Dilapidated	<u>1,119</u>	<u>19</u>
TOTAL	5,785	100

Figures for the county taken from the U.S. Census, are presented in the following table.

CONDITION OF HOUSING
(Beaufort County)
1960

	<u>Number</u>	<u>Percent</u>
Standard	6,746	59
Deteriorating	2,874	25
Dilapidated	1,764	16
	<hr/>	<hr/>
TOTAL	11,384	100

As shown in these two tables, the housing conditions of the planning area are substantially worse than in the county as a whole. Only 41 percent of the houses in the entire county are substandard; whereas, 58 percent of the houses in the planning area are substandard. In the census, houses are judged not only externally but also internally. This does not account for the 17 percent difference, however; external and internal conditions usually are practically the same. It is obvious that houses in the incorporated towns are superior to the unincorporated areas. For example, only 34 percent of the houses in the City of Washington are substandard. The major difference is tenant housing; almost all the tenant houses are substandard. Another group of substandard houses are caused by the building of modest housing by low income families. Of course, these families are building all they can afford, but they often do not correct the defects caused by normal use. This type of house does not last long unless it is looked after properly.

COMMERCIAL

There are 207 commercial establishments in the county utilizing approximately 200 acres of land. Most of these are service stations, grocery stores, and general stores; many are located at crossroads. Most of these

do not present a problem for the county; however, some problems do exist. One example is the shabby appearance of some of the buildings. Many are very old and deteriorated. These stores have established clienteles made up of rural residents, and the owners do not feel that improvements will bring about additional business. Another problem is that stores are placed too near the rights-of-way in some places, especially at intersections.

Two aesthetic problems present in Beaufort County are poorly managed junk yards and billboards. Junk yards present the same problems in Beaufort County as they do everywhere. None of these enterprises made any attempt to hide their unsightliness. The Planning Board recognizes this type of business as strictly legitimate, but the Board feels that efforts should be made to hide the necessary ugliness.

The billboard problem is not as great in the county as it is in many counties. Most of the signs are small. Lack of heavily traveled roads has prevented major investment in billboards. Not many signs are in the county except on U.S. Highways 17 and 264.

The 1967 session of the North Carolina General Assembly passed three acts that promise to have a profound effect upon highway beautification. Regulated by these acts are billboards and junk yards along interstate and primary highways and authorizes the acquisition of property for the enhancement of scenic beauty along any part of the state highway system.

Chapter 1248 makes it unlawful to erect or maintain any outdoor advertising device within 660 feet of the right-of-way of any interstate or primary highway and visible from the main traveled way, except for the following categories:

(a) Official signs and notices, and signs of utilities giving warning as to the location of an underground installation;

(b) Advertising for sale or lease of the property on which the device is situated;

(c) Advertising, in conformity with State Highway Commission rules, in areas zoned or used for commercial or industrial purposes.

The State Highway Commission is authorized to condemn or purchase any existing outdoor advertising which may have been lawfully erected prior to application of the law but which violates its terms so that it can be removed. The State Highway Commission has the authority, after 30 days' notice, to remove any unlawful signs at the expense of the owner and without compensation. Violation of the act is also subject to both civil and criminal penalties.

Another act makes it unlawful to establish or operate a junk yard within 1,000 feet of the right-of-way of any interstate or primary highway except in the following cases:

(a) Junk yards which are not visible from the main-traveled way at any season of the year;

(b) Junk yards which are screened from the main-traveled way by natural objects, plantings, fences, or other appropriate means at all seasons of the year;

(c) Junk yards within areas which are zoned or used for industrial purposes.

In the case of unlawful junk yards, the State Highway Commission may, after 30 days' notice, remove any junk or otherwise make the junk yard conform to the provisions of the act, at the expense of the owner and without compensation. It may also bring civil or criminal actions to enforce the law.

In the case of lawfully-established existing junk yards which violate the act, the State Highway Commission may (a) screen the junk yard, acquiring such property as may be necessary for this purpose, or where screening would be inadequate, (b) acquire the junk yard and remove the junk, (c) acquire and dispose of the junk itself, (d) pay for the expense of relocating the junk, or (e) acquire other property to which the junk can be moved and convey it to the owner of the junk yard for that purpose.¹

The third act is primarily intended to authorize the acquisition of "scenic easements." Exercising the powers granted in this act, the State Highway Commission could acquire interests in property at some distance from any highway in order to preserve the appearance of the area. The act is not limited to such easements, however. It permits the acquisition of any kind of real property in the vicinity of a public highway where the objective is to restore, preserve, or enhance natural or scenic beauty.²

These three acts have no effect until Federal funds are made available to the State for the purpose of carrying out the provisions of this act, and the State Highway Commission has entered into an agreement with the Secretary of Transportation as provided by the Highway Beautification Act of 1965. Also, the property acquisition act provides that the State Highway Commission shall have no duty to acquire property unless Federal aid is made available. Therefore, the fight for highway beautification has not been completely won.

¹N.C. Sess. Laws 1967, ch. 1198.

²N.C. Sess. Laws 1967, ch. 1247.

INDUSTRIAL

The only major industrial land use in the planning area is the Texas Gulf Sulphur (TGS) processing plant consisting of 750 acres of land near Aurora. In addition to this, Texas Gulf Sulphur has approximately sixteen thousand acres of land that will be mined in the future. This does not include 9,000 acres of land under the Pamlico River.

Other than Texas Gulf Sulphur, there are only five small industries scattered over the planning area. These other firms are feed storage or grinding and sawmills. Three are located in Pinetown, and Bunyon and Edward contain one each.

There will be a large increase in the amount of land used for industrial purposes because other phosphate processing plants will begin operations. It is expected that at least three other companies will eventually mine and process phosphate. At least one of these firms will be of comparable size to Texas Gulf Sulphur.

The future appears bright that the county will be able to attract industries that will use the phosphate as a raw material. Among other things, phosphate can be used for fertilizer, industrial chemicals, and food additives. Aurora may be the center of this industrial growth. The town can supply public water and sewerage services. Aurora also has moderately good roads, railroad transportation, and will have natural gas service in the near future.

PUBLIC AND SEMI-PUBLIC

Included in this category are cultural, recreational, and governmental land uses. The major cultural land uses are churches, cemeteries, and lodges. No problems are presented by these uses in most cases; however, a few of them

are built on inadequate lots or with inadequate setbacks. Another problem is that some of the church members are forced to park their cars on the shoulder and part of the road because of inadequate parking facilities creating a traffic hazard. Some cemeteries present an aesthetic problem because of a lack of upkeep. This usually occurs in the small cemeteries or gravesites where people wanted to be buried on their land instead of in church or private cemeteries. These graves usually result in poorly maintained conditions.

There are not many governmental land uses in the planning area. There are five schools, the county home for the aged, two highway department stations, and the Voice of America Site. The VOA site is the only large land user; it contains 2,600 acres.

Other than the aforementioned lodges, the only recreational facilities in the planning area are two camps and a country club that contains a golf course and marina. The only public outdoor recreation is hunting and fishing. The county has no recreational lands. This is an area that the county should take action as soon as possible. According to the National Park and Recreation Standards, a county should provide its citizens with 10 acres of land for every 1,000 population. This excludes any regional park serving more than the immediate area and also excludes any conservation and wildlife areas. Based on this standard, Beaufort County needs 36 acres now. The county officials have shown signs of recognizing this weakness. The county commissioners recently approved the allocation of money to help Belhaven install a city park. The Planning Board has recommended a county park of approximately 200 acres in the Economic Potential Study.

FORESTRY

Beaufort County's land area totals 531,842 acres, of which 354,200 acres, 66.6 percent, is commercial forest land. Due to reforestation measures and improved forest management practices commercial forest land was increased within the county by 13,800 acres between 1955-1963. These measures are continuing: 8,362,275 trees were planted in the 1963-1968 tree planting seasons.¹

Private ownership of forest land accounts for 351,000 acres compared to 3,200 acres in public ownership.² Pulp and paper companies own 37.9 percent of the commercial forest land, the largest holdings being those of Weyerhaeuser Paper Company. A summary of Beaufort County's forest pulpwood production follows:

Round Pulpwood Production³ (in standard cords)

<u>Year</u>	<u>Pine</u>	<u>Hardwood</u>	<u>Total</u>
1959	43,798	10,736	54,534
1960	56,773	6,253	63,026
1961	37,557	11,431	48,988
1962	73,714	17,387	91,101
1963	58,151	16,520	74,671
1964	83,269	17,035	100,304
1965	127,682	16,841	144,523
1966	93,881	18,064	111,945
1967	84,404	18,011	102,415

¹ N. C. Division of Forestry, Seedling Records: 1963-1968.

² "Preliminary Forest Survey Statistics For The Northern Coastal Plain of N. C.", 1963, Division of Forest Economics Research, U. S. Department of Agriculture.

³ "Southern Pulpwood Production", Southern and Southeastern Forest Experiment Stations, Forest Service, U. S. Department of Agriculture, Asheville, N. C., 1968.

BEAUFORT COUNTY NORTH CAROLINA

1 MILE



JULY 1988

Forest Lands

- FOREST LANDS
- AGRICULTURE AND OPEN LAND



1963
Net Volume of Timber by Species Group⁴
(in thousands of cords)

	<u>Softwoods</u>		<u>Hardwoods</u>		
	<u>Pine</u>	<u>Other</u>	<u>Soft</u>	<u>Hard</u>	<u>Total</u>
Sawtimber	1,613	92	699	238	2,642
All Timber	2,877	102	1,893	550	5,422

Loblolly pine is the dominant forest type and represents approximately 60 percent of the commercial forest lands. The remaining forest lands are of hardwood-pine (2%), pond-pine (22%), and oak-gum-cypress (16%) forest types.

The location of all lands used for forestry is shown on the Covered and Cleared Land Map. Also shown on this map is the land held by pulp and paper companies.

AGRICULTURE

Historically, agriculture has been the most significant activity in Beaufort County. Although farm employment declined 48 percent between 1940 and 1960, agriculture is not a dying activity in the county. In fact, more land is being farmed than ever before. The difference is that mechanization has forced the farmers to either become big businessmen or sell. Many have sold, thereby reducing the number of farms but raising the size of the average farm.

⁴ "North Carolina's Timber", U. S. Forest Service Resource Bulletin SE-5, U.S.D.A., Southeastern Forest Experiment Station, Asheville, N. C., 1966.

As reported by the 1960 U. S. Census, there are 110,546 acres of land used for crop land and 7,714 acres used in pasture land. This total of 118,250 acres is an increase of 6,679 acres between 1954 and 1959. All of this increase was in crop land. In fact, the acres in pasture land declined by 408 acres. This decline has been checked by Texas Gulf Sulphur utilizing 1,300 acres of their land to raise cattle. This company is proving to the county residents that beef cattle can be raised very successfully in the county.

A more detailed analysis of agricultural conditions and trends is presented in the Economic Potential Study for Beaufort County. For the convenience of the reader, two tables are reprinted in this report. Presented in the first is a summary of basic facts involving such things as farm size and type. Production statistics for the county are presented in the second table.

SUMMARY OF FARM ACREAGE AND FARMS
BY SIZE, TYPE, AND ECONOMIC CLASS

SUBJECT	1959	1964
Approximate Acres of Land Area	531,840	531,840
Proportion in Farms	46.2	41.3
<u>Farms, Acreage, and Value</u>		
Total Farms	2,359	1,683
Acres in Farms	245,766	219,839
Average Size of Farm	104.2	130.6
Value of Land and Buildings:		
Average Per Farm	\$17,022	\$33,028
Average Per Acre	183.12	252.66
<u>Farms by Size</u>		
Less than 10 Acres	176	95
10 to 49 Acres	935	556
50 to 69 Acres	325	233
70 to 99 Acres	270	207
100 to 139 Acres	222	184
140 to 179 Acres	134	114
180 to 219 Acres	81	80
220 to 259 Acres	48	49
260 to 499 Acres	114	104
500 to 999 Acres	37	42
1,000 to 1,999 Acres	11	13
2,000 Acres or More	6	6
<u>Farms by Type</u>		
Field-Crop Farms Other Than Vegetable and		
Fruit and Nut	1,433	1,269
Cash-Grain	193	248
Tobacco	1,225	1,008
Cotton	5	2
Other Field Crop	10	11
Vegetable	--	5
Fruit and Nut	--	1
Poultry	85	21
Dairy	6	12
Livestock Other Than Poultry and Dairy	61	47
General	182	51
Miscellaneous and Unclassified	571	277
<u>Farms By Economic Class</u>		
Commercial Farms	1,813	1,428
Class I (Sales of \$40,000 or More)	16	63
Class II (Sales of \$20,000 to \$39,999)	43	150
Class III (Sales of \$10,000 to \$19,999)	248	377
Class IV (Sales of \$5,000 to \$9,999)	586	362
Class V (Sales of 2,500 to \$4,999)	600	292
Class VI (Sales of \$50 to \$2,499)	320	184
Other Farms	525	255
Part Time (Operator Working Off Farm 100		
Days or More, Sales \$50 to \$2,499)	335	129
Part Retirement (Operator 65 Years Old		
and Over, Sales \$50 to \$2,499)	190	126
Abnormal	---	---

SOURCE: U.S. Bureau of the Census, 1964 Census of Agriculture,
Preliminary Report.

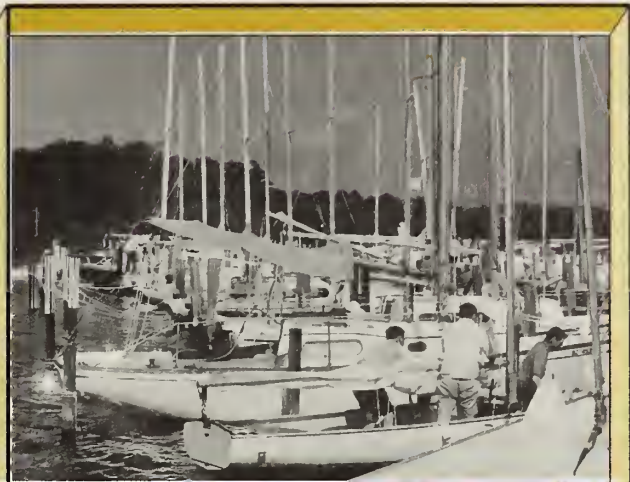
GROSS INCOME FROM SALE OF FARM PRODUCTS, BEAUFORT COUNTY
1957-1966, ANTICIPATED GROSS INCOME 1971

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1971
Total Income	11.6	19.0	17.8	22.3	20.3	18.3	27.4	28.3	29.3	30.2	37.5
Poultry & Turkey	.36	.44	.53	.86	.93	1.19	1.31	1.38	1.26	1.77	2.81
Beef Cattle	.18	.23	.28	.28	.30	.39	.39	.76	.62	.64	.75
Livestock Products	.57	.76	.68	.57	.55	.73	.73	.71	.78	.54	.78
Swine	1.29	1.56	1.44	1.66	1.98	2.14	1.79	2.08	2.88	3.60	4.36
Soybeans	1.9	1.9	1.8	2.2	2.6	2.6	3.3	3.4	4.1	4.5	7.1
Corn	.35	1.8	1.2	2.2	.89	1.4	1.6	1.8	2.4	1.5	3.9
Cotton, Peanuts, Small Grain, Sweet Potatoes, Lespedeza and Hay	.63	1.12	1.02	.89	.98	.89	1.09	.79	.78	.84	.87
Commercial Flowers	.40	.45	.42	.30	.32	.24	.30	.30	.30	.30	.60
Irish Potatoes	.28	.37	.87	.25	.30	.33	.50	.84	1.05	.54	.67
Vegetables	.09	.23	.21	.33	.24	.23	.23	.24	.22	.37	.51
Tobacco	5.4	7.9	6.8	10.4	8.0	5.1	10.6	10.4	9.1	9.9	10.0
Government Payments	.07	.52	.14	.12	.95	.97	.91	.89	1.07	1.18	--- ²
Forestry ¹	1.8	1.9	2.2	2.8	2.9	3.0	3.5	4.0	4.7	4.9	6.4

¹Includes income from all forest land in county.

²Increased demand for Agricultural Products may eliminate Government Payments.

SOURCE: North Carolina Agricultural Extension Service, County Agent, Beaufort County.



SUMMARY OF DEVELOPMENT POTENTIAL

SUMMARY OF DEVELOPMENT POTENTIAL

As stated in the Economic Potential Study, Beaufort County has a strong economy and should increase in population considerably within the next twenty years. Much of this growth will result from the expansion of the phosphate mining in the county.

Of course, if all this growth does take place, many new houses will be built. Most of this development will take place near the existing towns that have public water and sewer treatment facilities and sprawled along the highways. Beaufort County needs to be very careful in regards to new houses that do not have public sewerage service because of the extremely high percentage of the county, 88 percent, that is totally unfit for septic tanks. It is hoped that the county sewer and water study financed by FHA will provide some answers to this problem. The county should adopt subdivision regulations that will require lots to be large enough to be safe.




Other than septic tank problems, three other situations may stand in the way of development: landholdings of large corporations, ground water resources, and transportation. The major problem with large corporations is that they are holding land that should be put to other uses. The large pulp companies have many acres of extremely promising agricultural land in forestry. Also much land along the Pamlico River is in corporation hands. The pressure of land prices will probably force the corporations to sell this land.

There is no longer any fear that ground water resources will be destroyed by the phosphate mining operations. This is because new state legislation will supervise the use of water in the county and strict application of the laws are expected. The new laws will not ruin the mining or expected mining in the county. On the other hand, it will insure the maximum feasible

**BEAUFORT COUNTY
NORTH CAROLINA**

0 1 2 MILES

**LAND POTENTIAL MAP**

-  LAND SUITABLE FOR INTENSIVE DEVELOPMENT
-  LAND UNSUITABLE FOR DEVELOPMENT
-  AGRICULTURAL



development of the phosphate industry while safeguarding the natural resources for total development of the county.

The third obstacle is transportation. The major deficiency in the transportation system is the lack of a bridge crossing the Pamlico east of Washington. There should be a tremendous potential in Beaufort County for attracting related industry to the phosphate mining. A proposed deep sea channel will increase this potential many times over. However, not much related industry is likely to enter Beaufort County until a bridge is built to cross the Pamlico River near Lees Creek. Industrial prospects repeatedly tell this to the people of the county. No industry wishes to locate where their markets and possible employees are so inconvenient. In most areas where bridges are proposed, convenience of travel is the major motive. However, in Beaufort County, this is a secondary consideration to the tremendous industrial development that probably would take place.

Although urban development will proceed at the highest rate in the history of the county, the county will remain agriculturally oriented. However, the emphasis in agriculture will change to truck farming. More than a million acres of good farm land goes into urban development every year in this country. In the near future, a "supercity" will develop from Norfolk, Virginia to Boston, Massachusetts and another from Atlanta, Georgia to Miami, Florida. The land between these two developments will find a good market for food crops. Also livestock production, especially beef cattle, will increase multifold. This is due to the nearby urban markets and Texas Gulf Sulphur. TGS has proven that beef cattle can be a lucrative enterprise in Beaufort County.

